

AD-A066 915

HAWAII INST OF GEOPHYSICS HONOLULU
RAW DATA AND FIRST ORDER CALCULATIONS FOR THE STUDY SILICA 'APP--ETC(11)
JAN 79 D C HURD, C FRALEY, J K FUGATE
HIC-79-1

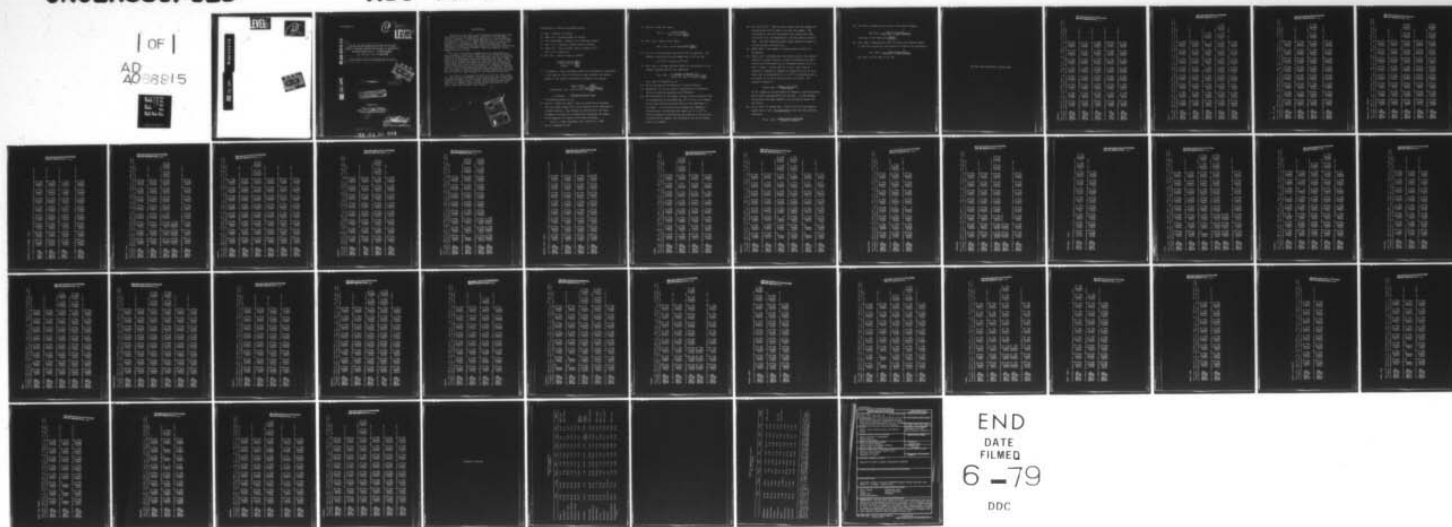
F/G 11/2

N00014-75-C-0209

NL

UNCLASSIFIED

| OF |
AD
A066915



LEVEL *ly*

12 *SC*

ADA066915

DDC FILE COPY

DDC
RECEIVED
APR 5 1979
RECEIVED
etc

DATA REPORT 35

(12)

(14)

HIG-79-1
HIG-DATA-35

LEVEL

AD A0 669 15

(6)

RAW DATA AND FIRST ORDER CALCULATIONS FOR THE STUDY
SILICA 'APPARENT' SOLUBILITIES AND RATES OF DISSOLUTION
AND PRECIPITATION FOR ca. 25 COMMON MINERALS
AT 1-2°C, pH 7.5-8.5 IN SEAWATER

(10)

David C./Hurd, Charles/Fraley, and James K./Fugate

DDC
RECEIVED
APR 5 1979
QC

(11) January 1979

(13) 48p.

DDC FILE COPY

This document has been approved
for public release and sale; its
distribution is unlimited.

Prepared for

OFFICE OF NAVAL RESEARCH
under contract N00014-75-C-0209
Marine Chemistry Subtask 3A

(15)

Charles E. Heisley
Charles E. Heisley
Director,
Hawaii Institute of Geophysics

164 400

JAB

79 04 03 022

INTRODUCTION

This data report gives the raw data and preliminary flux calculations for the experiments referred to in the paper "Silica 'Apparent' Solubilities and Rates of Dissolution and Precipitation for ca. 25 Common Minerals at 1-2°C, pH 7.5-8.5 in Seawater", by David C. Hurd, Charles Fraley, and James K. Fugate, to be published in the volume "Proceedings from Symposium on Chemical Modeling--Speciation Sorption, Solubility, and Kinetics in Aqueous Systems", American Chemical Society Symposium Series, 1979.

In these experiments approximately 25 common minerals were allowed to react with 1-2°C, pH 7.5-8.5 seawater having different dissolved silica concentrations, and the increase or decrease in dissolved silica was monitored with time. What makes these experiments unique is that they were done at low temperature (1-2°C) and that the solutions were periodically centrifuged and a new solution having the original dissolved silica concentration was re-introduced. In addition, specific surface areas of the minerals were determined before and after the experiment to monitor whatever changes might have occurred and to allow for these changes in the ensuing calculations.

The report is divided into two sections; the first gives the raw data and preliminary calculations and the second gives elemental analyses of each mineral and references to analogous analyses by other workers. X-ray diffraction analyses were done on all samples, and listings of the positions of the major peaks are available upon request.

ACCESSION for	
NTIS	White Section <input checked="" type="checkbox"/>
NDC	Buff Section <input type="checkbox"/>
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
DEF	SP. CIAL
A	

Explanation of symbols and abbreviations:

- 1) Den. = Density of mineral
- 2) FORM. WT. = Formula weight of mineral
- 3) # Si Atoms/FORM. = Number of Si atoms per formula
- 4) Spec. S.A. = Specific surface area in m^2/gram
- 5) Total S.A. = Total surface area of sample in m^2 =
Spec. S.A. x sample wt
- 6) Mol. Vol. = Molar volume in cm^3/mol

$$= \frac{\text{FORMULA WEIGHT } \left(\frac{\text{gr}}{\text{Mol}} \right)}{\text{Density } \left(\frac{\text{gr}}{\text{cm}^3} \right)}$$

- 7) L Thickness = Layer thickness, where the thickness is calculated as the edge of a unit cell whose volume contains one formula weight of the mineral and which is assumed to be cubical.

$$\text{Volume unit cell} = \frac{\text{Molar Volume } \left(\frac{\text{cm}^3}{\text{Mole}} \right)}{6.02 \times 10^{23} \left(\frac{\text{Molecular units}}{\text{Mole}} \right)}$$

$$\text{L Thickness} = \sqrt[3]{\text{Volume molecular unit}}$$

L Thickness measured in cm.

- 8) Vol./L = Volume per layer. This is calculated by assuming that the total surface area of the mineral can be regarded as a planar surface. This surface is multiplied by the layer thickness to arrive at a volume which represents the amount of the mineral to a depth of one layer thickness.

$$\text{Vol./L.} = \text{Layer thickness (cm)} \times \text{Total S.A. (cm}^2\text{)}$$

Vol./L. measured in cm^3 .

9) Mol./L = Moles per layer.

$$\text{Mol./L.} = \frac{\text{Vol./L (cm}^3\text{)}}{\text{Molar Volume } \left(\frac{\text{cm}^3}{\text{Mole}}\right)}$$

10) Mol. Si/L = Moles Si per layer

$$\text{Mol. Si/L} = (\# \text{ Si Atoms/FORM}) \left(\frac{\text{Mol}}{\text{Layer}} \right)$$

11) S.A./cc = Total surface area m^2 per cm^3 of solution. The amount of solution for each sample was 75 cm^3 so that

$$\text{S.A./cm}^3 = \text{Total S.A./}75 \text{ cm}^3$$

12) Part. Rad. = Average particle radius of the particle in the sample assuming that all are spherical.

$$\text{Part. Rad.} = \frac{3 \times \text{Weight of Sample (gr)}}{\text{Total S.A. (cm}^2\text{)} \times \text{Density } \left(\frac{\text{gr}}{\text{cm}^3}\right)}$$

Part. Rad. is measured in cm.

13) pH is the range of pH values for a given solution.

14) MicroM Dis. Si is the initial concentration of dissolved silica in solution measured in 10^{-6} Moles/l.

15) Mol./Area (0-6) is the number of moles either dissolved from or precipitated by the sample per cm^2 of area of the sample in the time interval from the start of the experiment to six weeks. It is calculated by summing the changes in concentration, multiplying this figure by 7.5×10^{-8} to convert changes in concentration in solution to silica lost or gained by the sample, and dividing by the total surface area of the sample.

- 16) Mol./Area (2-6). Same as above except only the changes in concentration from 14 days to 42 days are summed. The following are the left-hand labels that appear with each new value of pH, μM dissolved Si, and new specific surface area. The data appearing beside these labels are based on the new specific surface area.
- 17) DELTA CONC. = the change in concentration of silica in micromoles.
- 18) Layers Lost - Assuming that the surface area of the mineral sample is a planar surface, a layer is defined to be this surface area multiplied by the thickness defined in (7) to give a volume. Layers lost up to each time value is computed by adding the changes in concentration up to that time; this is multiplied by 7.5×10^{-8} to concentrations in micromolar in 75 ml of fluid to moles of silica. The complete formula is

$$\text{Layers Lost} = \frac{(\sum \Delta C \times 7.5 \times 10^{-8})}{\text{Moles/layer}}$$

If the changes in concentration are negative, this calculation gives layers precipitated by the mineral. If some changes are positive and some negative, the calculation gives the net effect.

- 19) % Vol. Lost = % volume lost. This is the % of the mineral sample that is lost (by dissolution) over the time interval indicated.

$$\% \text{ Vol. Lost} = \frac{\text{Layers lost} \times \text{Vol/layer}}{\text{Volume of Sample}}$$

20) AVG FLUX = Average flux of silica from mineral sample.

$$\text{AVG FLUX} = \frac{\Sigma \Delta C \times 7.5 \times 10^{-8}}{\text{Total S.A.} \times \text{TIME INTERVALS}}$$

The units of AVG FLUX are $\left(\frac{\text{Moles}}{\text{cm}^2 \cdot \text{sec}} \right)$.

21) Ins. FLUX = Instantaneous flux of silica from mineral sample
or the flux during only one interval of time in the experiment.

$$\text{Ins. FLUX} = \frac{\Delta C \times 7.5 \times 10^{-8}}{\text{Total S.A.} \times \text{TIME INTERVAL}}$$

The units are the same as in (20).

RAW DATA AND PRELIMINARY CALCULATIONS

ANORTWITE

Den. = 2.76 Form. Wt. = 278 # Si Atoms / Form. = 2 Spec. S. A. = .88 Total S. A. = 1.76 Mol. Vol. = 100.7
L Thickness = 5.51 - 8 Vol./L = 9.71 - 4 Mol./L = 9.64 - 6 Mol. Si/L = 1.92 - 5 S.A./cc = 2.34 2 Part. Rad. = 1.23 - 4

pH = 8.1-8.3 MicroM Dis. Si = 5.6 Mol./Area(0-6) = 3.91-10 Mol./Area(2-6) = 2.51-10 Spec. S.A. = 7.00 -1

DELTA CONC.	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	6.00	9.00	1.10	1.00	1.00	8.00	1.00	1.00
X VOL. LOST	2.93 - 2	7.33 - 2	1.27 - 1	1.75 - 1	2.19 - 1	2.59 - 1	3.07 - 1	3.56 - 1
AVG. FLUX	3.12 - 5	7.81 - 5	1.35 - 4	1.87 - 4	2.34 - 4	2.76 - 4	3.28 - 4	3.80 - 4
INS. FLUX	8.92-15	9.30-16	2.30-16	1.59-16	1.32-16	1.17-16	1.11-16	1.07-16
	8.92-15	5.82-16	1.13-16	8.85-17	7.97-17	7.08-17	8.85-17	8.85-17

pH = 7.6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 3.49-10 Mol./Area(2-6) = 2.37-10 Spec. S.A. = 6.00 -1

DELTA CONC.	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.00	6.00	8.00	7.00	8.00	7.00	8.00	8.00
X VOL. LOST	2.28 - 2	5.70 - 2	1.02 - 1	1.42 - 1	1.88 - 1	2.28 - 1	2.73 - 1	3.19 - 1
AVG. FLUX	2.08 - 5	5.21 - 5	9.38 - 5	1.30 - 4	1.72 - 4	2.08 - 4	2.50 - 4	2.91 - 4
INS. FLUX	6.94-15	4.52-16	9.64-17	7.23-17	8.26-17	7.23-17	8.26-17	8.26-17

pH = 7.8-8.0 MicroM Dis. Si = 114.0 Mol./Area(0-6) = 5.83-10 Mol./Area(2-6) = 2.49-10 Spec. S.A. = 8.10 -1

DELTA CONC.	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-1.50 1*	-2.70 1	-3.00 1	-2.50 1	-1.20 1	-7.00	-4.00	-6.00
X VOL. LOST	-6.33 - 2	-1.77 - 1	-3.04 - 1	-4.09 - 1	-5.60 - 1	-4.90 - 1	-5.06 - 1	-5.32 - 1
AVG. FLUX	-7.81 - 5	-2.18 - 4	-3.75 - 4	-5.05 - 4	-5.68 - 4	-6.04 - 4	-6.25 - 4	-6.56 - 4
INS. FLUX	-1.92-14	-2.25-15	-5.51-16	-3.71-16	-2.78-16	-2.21-16	-1.83-16	-1.60-16
	-1.92-14	-1.50-15	-2.67-16	-1.91-16	-9.18-17	-5.33-17	-3.06-17	-4.59-17

pH = 8.1-8.3 MicroM Dis. Si = 5.6 Mol./Area(0-6) = 4.50-10 Mol./Area(2-6) = 2.93-10 Spec. S.A. = 6.00 -1

LAYERS LOST	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
X VOL. LOST	5.00	9.00	1.10	1.00	1.00	8.00	1.00	1.00
AVG. FLUX	2.85 - 2	7.98 - 2	1.42 - 1	1.99 - 1	2.50 - 1	2.96 - 1	3.53 - 1	4.10 - 1
INS. FLUX	2.60 - 5	7.29 - 5	1.30 - 4	1.82 - 4	2.29 - 4	2.71 - 4	3.23 - 4	3.75 - 4
	8.68-15	1.01-15	2.58-16	1.80-16	1.51-16	1.34-16	1.28-16	1.24-16
	8.68-15	6.79-16	1.32-16	1.03-16	9.30-17	8.26-17	1.03-16	1.03-16

pH = 7.6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 2.49-10 Mol./Area(2-6) = 1.69-10 Spec. S.A. = 8.40 -1

DELTA CONC.	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.00	6.00	8.00	7.00	8.00	7.00	8.00	8.00
X VOL. LOST	1.62 - 2	4.07 - 2	7.33 - 2	1.01 - 1	1.34 - 1	1.62 - 1	1.95 - 1	2.28 - 1
AVG. FLUX	2.08 - 5	5.21 - 5	9.38 - 5	1.30 - 4	1.72 - 4	2.08 - 4	2.50 - 4	2.91 - 4
INS. FLUX	4.96-15	5.16-16	1.32-16	9.22-17	8.11-17	7.38-17	7.08-17	6.88-17
	4.96-15	3.23-16	6.88-17	5.16-17	5.90-17	5.16-17	5.90-17	5.90-17

ALBITE

Den. = 2.62 Form. Wt. = 262 # Si Atoms / Form. = 3 Spec. S. A. = .62 Total S. A. = 1.24 Mol. Vol. = 100.0
L Thickness = 5.50 - 8 Vol./L = 6.82 - 4 Mol./L = 6.82 - 6 Mol. Si/L = 2.04 - 5 S.A./cc = 1.65 2 Part. Rad. = 1.84 - 4
pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 4.79-10 Mol./Area(2-6) = 3.13-10 Spec. S.A. = 4.30 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	6.00	1.10	8.00	7.00	6.00	7.00	8.00
1.05 - 2	4.22 - 2	1.00 - 1	1.42 - 1	1.79 - 1	2.11 - 1	2.48 - 1	2.90 - 1
6.55 - 6	2.62 - 5	6.22 - 5	8.84 - 5	1.11 - 4	1.31 - 4	1.53 - 4	1.80 - 4
4.84 - 15	8.07 - 16	2.73 - 16	1.94 - 16	1.63 - 16	1.44 - 16	1.35 - 16	1.32 - 16
4.84 - 15	6.31 - 16	1.85 - 16	1.15 - 16	1.00 - 16	8.65 - 17	1.00 - 16	1.15 - 16

pH = 7.6- .6 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.70-10 Mol./Area(2-6) = 9.92-11 Spec. S.A. = 6.80 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	4.00	7.00	3.00	4.00	3.00	4.00	4.00
6.67 - 3	4.00 - 2	4.33 - 2	5.34 - 2	6.67 - 2	7.67 - 2	9.01 - 2	1.03 - 1
6.55 - 6	1.96 - 5	4.25 - 5	5.24 - 5	6.55 - 5	7.53 - 5	8.84 - 5	1.01 - 4
3.06 - 15	3.82 - 16	1.18 - 16	7.29 - 17	6.07 - 17	5.24 - 17	4.92 - 17	4.71 - 17
3.06 - 15	2.66 - 16	7.44 - 17	2.73 - 17	3.64 - 17	2.73 - 17	3.64 - 17	3.64 - 17

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = 0.00 Mol./Area(2-6) = 3.98-11 Spec. S.A. = 4.70 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	4.00	1.00	1.00	2.00	2.00	1.00	1.00
-9.66 - 3	-2.89 - 2	-2.41 - 2	-2.89 - 2	-1.93 - 2	-9.66 - 3	-4.83 - 3	0.00
-6.55 - 6	-1.96 - 5	-1.63 - 5	-1.96 - 5	-1.30 - 5	-6.55 - 6	-3.27 - 6	0.00
-4.43 - 15	-5.58 - 16	-6.59 - 17	-3.95 - 17	-1.75 - 17	-6.59 - 18	-2.63 - 18	0.00
-4.43 - 15	-3.83 - 16	1.53 - 17	-1.31 - 17	2.63 - 17	2.63 - 17	1.31 - 17	1.31 - 17

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -1.87-10 Mol./Area(2-6) = -1.58-10 Spec. S.A. = 5.20 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
4.00	-1.30	5.00	-5.00	-7.00	-6.00	-2.00	-2.00
1.74 - 2	-3.92 - 2	-1.74 - 2	-3.92 - 2	-6.98 - 2	-9.60 - 2	-1.04 - 1	-1.13 - 1
1.30 - 5	-2.94 - 5	-1.30 - 5	-2.94 - 5	-5.23 - 5	-7.20 - 5	-7.85 - 5	-8.51 - 5
8.01 - 15	-7.51 - 16	-4.76 - 17	-5.36 - 17	-6.35 - 17	-7.55 - 17	-5.72 - 17	-5.16 - 17
8.01 - 15	-1.13 - 15	6.95 - 17	-5.96 - 17	-8.34 - 17	-7.15 - 17	-2.38 - 17	-2.38 - 17

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 2.29-11 Mol./Area(2-6) = 6.12-11 Spec. S.A. = 4.90 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	-3.00	0.00	0.00	2.00	2.00	2.00	2.00
-9.26 - 3	-2.31 - 2	-2.31 - 2	-2.31 - 2	-1.38 - 2	-4.63 - 3	4.63 - 3	1.38 - 2
-6.55 - 6	-1.63 - 5	-1.63 - 5	-1.63 - 5	-9.82 - 6	-3.27 - 6	3.27 - 6	9.82 - 6
-4.25 - 15	-4.42 - 16	-6.32 - 17	-3.16 - 17	-1.26 - 17	-3.16 - 18	2.53 - 18	6.32 - 18
-4.25 - 15	-2.77 - 16	0.00	0.00	2.53 - 17	2.53 - 17	2.53 - 17	2.53 - 17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

APUA PT. LAVA

Den. = 3.90 Form. Wt. = 116 # Si Atoms / Form. = 1 Spec. S. A. = .31 Total S. A. = .62 Mol. Vol. = 29.7
L Thickness = 3.67 -8 Vol./L = 2.27 -4 Mol./L = 7.66 -6 Mol. Si/L = 7.66 -6 S.A./cc = 8.26 1 Part. Rad. = 2.48 -4

PH = 8.3-8.5 MicroM Dia. Si = 1.8 Mol./Area(0-6) = 2.58 -9 Mol./Area(2-6) = 2.23 -9 Spec. S.A. = 3.20 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	5.00	7.00	1.80	1.70	1.60	1.60	1.18	2.40
LAYERS LOST	4.74 -2	1.13 -1	2.84 -1	4.45 -1	5.97 -1	7.49 -1	1.86	2.09
X VOL. LOST	2.17 -5	5.21 -5	1.30 -4	2.04 -4	2.74 -4	3.43 -4	8.56 -4	9.61 -4
AVG. FLUX	1.62-14	1.62-15	5.81-16	4.55-16	4.06-16	3.82-16	7.63-16	7.13-16
INS. FLUX	1.62-14	9.90-16	4.06-16	3.29-16	3.10-16	3.10-16	2.28-15	4.65-16

PH = 7.6-7.9 MicroM Dia. Si = 3.9 Mol./Area(0-6) = 6.79-10 Mol./Area(2-6) = 4.24-10 Spec. S.A. = 5.30 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	6.00	8.00	2.20	1.60	1.40	1.20	1.00	8.00
LAYERS LOST	3.43 -2	8.01 -2	2.06 -1	2.97 -1	3.77 -1	4.46 -1	5.03 -1	5.49 -1
X VOL. LOST	2.60 -5	6.09 -5	1.56 -4	2.26 -4	2.87 -4	3.39 -4	3.82 -4	4.17 -4
AVG. FLUX	1.17-14	1.14-15	4.21-16	3.04-16	2.57-16	2.28-16	2.05-16	1.87-16
INS. FLUX	1.17-14	6.83-16	3.00-16	1.87-16	1.63-16	1.40-16	1.16-16	9.35-17

PH = 8.3-8.5 MicroM Dia. Si = 105.4 Mol./Area(0-6) = -2.55-10 Mol./Area(2-6) = 1.53-10 Spec. S.A. = 2.20 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-4.00	-1.10	-9.00	2.00	-3.00	3.00	3.00	4.00	0.00	6.00
LAYERS LOST	-5.21 -2	-2.06 -1	-3.31 -1	-3.03 -1	-3.44 -1	-3.03 -1	-2.62 -1	-2.06 -1	-2.06 -1	-1.24 -1
X VOL. LOST	-1.73 -5	-6.52 -5	-1.04 -4	-9.56 -5	-1.08 -4	-9.56 -5	-8.26 -5	-6.52 -5	-6.52 -5	-3.31 -5
AVG. FLUX	-1.89-14	-2.95-15	-6.76-16	-3.10-16	-2.34-16	-1.53-16	-1.07-16	-7.04-17	-5.28-17	-2.33-17
INS. FLUX	-1.89-14	-2.26-15	-2.95-16	5.63-17	-8.45-17	8.45-17	8.45-17	1.12-16	0.00	8.45-17

PH = 7.6-7.9 MicroM Dia. Si = 101.7 Mol./Area(0-6) = 3.06-10 Mol./Area(2-6) = 1.98-10 Spec. S.A. = 4.90 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	4.00	8.00	1.00	4.00	4.00	4.00	4.00
LAYERS LOST	1.23 -2	3.71 -2	8.66 -2	1.48 -1	1.73 -1	1.98 -1	2.22 -1	2.47 -1
X VOL. LOST	8.89 -6	2.60 -5	6.08 -5	1.04 -4	1.21 -4	1.39 -4	1.56 -4	1.74 -4
AVG. FLUX	4.25-15	5.31-16	1.77-16	1.51-16	1.18-16	1.01-16	9.11-17	8.43-17
INS. FLUX	4.25-15	3.69-16	1.18-16	1.26-16	5.06-17	5.06-17	5.06-17	5.06-17

BENTONITE (N.E. WYOMING)

Den. = 2.00 Form. Wt. = 360 # Si Atoms / Form. = 4 Spec. S. A. = 68.00 Total S. A. = 136.00 Mol. Vol. = 180.0
L Thickness = 6.69 - 8 Vol./L = 9.10 - 2 Mol./L = 5.06 - 4 Mol. Si/L = 2.02 - 3 S.A./cc = 1.81 4 Part. Rad. = 2.20 - 6

PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 2.13-10 Mol./Area(2-6) = 1.32-10 Spec. S.A. = 1.04 1

DELTA CONC.	4.90	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.18 - 2	7.60	1	1.00	2	8.40	1	7.70	1
X VOL. LOST	1.65 - 4	3.02	-2	5.45	-2	7.48	-2	9.35	-2
AVG. FLUX	4.90-15	5.21-16	1.34-16	6.95-17	5.00-17	4.59-17	3.63-17	6.16-17	5.88-17
INS. FLUX	7.02-15	5.34-16	6.95-17	5.00-17	4.59-17	3.63-17	4.17-17	4.47-17	4.47-17

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 2.71-10 Mol./Area(2-6) = 1.49-10 Spec. S.A. = 8.90

DELTA CONC.	6.00	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.69 - 2	4.67	-2	8.20	-2	1.11	-1	1.52	-1
X VOL. LOST	2.02 - 4	5.56	-4	9.78	-4	1.33	-3	1.81	-3
AVG. FLUX	7.02-15	8.04-16	2.02-16	1.01-16	7.31-17	5.57-17	4.45-17	8.29-17	7.48-17
INS. FLUX	7.02-15	5.34-16	6.95-17	5.00-17	4.59-17	3.63-17	4.17-17	4.47-17	4.47-17

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 7.50-11 Mol./Area(2-6) = 3.40-11 Spec. S.A. = 7.70

DELTA CONC.	2.70	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	8.83 - 3	1.76	-2	2.74	-2	3.53	-2	4.15	-2
X VOL. LOST	9.11 - 5	1.82	-4	2.83	-4	3.64	-4	4.28	-4
AVG. FLUX	3.65-15	3.04-16	6.76-17	4.34-17	3.08-17	2.53-17	2.06-17	1.69-17	1.45-17
INS. FLUX	3.65-15	1.58-16	2.81-17	1.93-17	5.63-18	9.66-18	1.04-17	1.12-17	5.23-18

PH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 2.03-10 Mol./Area(2-6) = 1.13-10 Spec. S.A. = 8.70

DELTA CONC.	4.00	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.15 - 2	3.24	-2	5.89	-2	7.90	-2	1.13	-1
X VOL. LOST	1.34 - 4	3.78	-4	6.98	-4	9.21	-4	1.31	-3
AVG. FLUX	4.78-15	5.58-16	1.47-16	7.89-17	4.70-17	4.98-17	3.42-17	6.14-17	5.59-17
INS. FLUX	4.78-15	3.74-16	7.89-17	4.70-17	4.98-17	3.42-17	2.85-17	2.85-17	2.85-17

PH = 8.3-8.5 MicroM Dis. Si = 205.0 Mol./Area(0-6) = -1.76-10 Mol./Area(2-6) = -1.30-10 Spec. S.A. = 9.00

DELTA CONC.	-8.00	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-2.23 - 3	-1.37	-2	-3.05	-2	-5.01	-2	-6.70	-1
X VOL. LOST	-2.69 - 5	-1.65	-4	-3.67	-4	-8.13	-4	-8.59	-2
AVG. FLUX	-9.25-16	-2.36-16	-7.50-17	-4.82-17	-6.16-17	-5.53-17	-4.27-17	-4.54-17	-3.85-17
INS. FLUX	-9.25-16	-2.06-16	-4.82-17	-4.82-17	-6.16-17	-5.53-17	-4.27-17	-4.54-17	-3.85-17

BENTONITE (N.E. WYOMING) (CONT.)

PH = 7.9-8.0 MicroM Dis. SI = 364.0 Mol./Area(0-6) = -4.74-11 Mol./Area(2-6) = -6.66-12 Spec. S.A. = 9.00

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-3.00	-5.40	-1.40	-1.30	-3.00	-1.00	8.00	2.00
X VOL. LOST	-8.39	-2.35	-2.74	-3.10	-3.19	-3.47	-3.24	-3.19
AVG. FLUX	-1.01	-2.83	-3.30	-3.74	-3.84	-4.18	-3.91	-3.84
INS. FLUX	-3.47	-4.05	-6.75	-3.82	-2.61	-2.13	-1.59	-1.30
	-3.47	-2.71	-1.12	-8.95	-2.06	-6.88	5.51	1.37

PH = 7.8-8.0 MicroM Dis. SI = 781.0 Mol./Area(0-6) = -6.83-11 Mol./Area(2-6) = -5.79-11 Spec. S.A. = 9.00

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.00	1.74	-9.90	-6.30	-4.30	-6.00	-2.40	-3.00
LAYERS LOST	-2.79	2.07	-6.99	-2.46	-3.66	-3.83	-4.50	-4.59
X VOL. LOST	-3.37	2.49	-8.43	-2.96	-4.42	-4.62	-5.43	-5.53
AVG. FLUX	-1.15	3.56	-1.72	-3.03	-3.00	-2.35	-2.21	-1.88
INS. FLUX	-1.15	8.75	-7.95	-4.34	-2.96	-4.13	-1.65	-2.06

PH = 7.9-8.0 MicroM Dis. SI = 364.0 Mol./Area(0-6) = -1.95-11 Mol./Area(2-6) = -3.59-12 Spec. S.A. = 1.67

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-3.00	-5.40	-1.40	-1.30	-3.00	-1.00	8.00	2.00
LAYERS LOST	-4.52	-8.59	-1.07	-1.26	-1.31	-1.46	-1.34	-1.31
X VOL. LOST	-1.01	-1.92	-2.39	-2.83	-2.93	-3.27	-3.00	-2.93
AVG. FLUX	-1.87	-1.48	-2.63	-1.55	-1.07	-9.00	-6.60	-5.38
INS. FLUX	-1.87	-1.46	-6.06	-4.82	-1.11	-3.71	2.97	7.42

PH = 7.8-8.0 MicroM Dis. SI = 781.0 Mol./Area(0-6) = -1.88-10 Mol./Area(2-6) = -5.81-11 Spec. S.A. = 1.07

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.00	-1.74	-9.90	-6.30	-4.30	-6.00	-2.40	-3.00
LAYERS LOST	-2.35	-6.45	-8.28	-1.02	-1.12	-1.14	-1.19	-1.26
X VOL. LOST	-3.37	-9.24	-1.25	-1.47	-1.61	-1.63	-1.71	-1.81
AVG. FLUX	-9.73	-1.11	-2.16	-1.26	-9.25	-7.02	-5.89	-5.20
INS. FLUX	-9.73	-7.36	-6.69	-3.65	-2.49	-3.47	-1.39	-1.73

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

BENTONITE (CRC)

Den. = 2.00 Form. Wt. = 360 # Si Atoms / Form. = 4 Spec. S. A. = 68.00 Total S. A. = 136.00 Mol. Vol. = 180.0
L Thickness = 6.69 - 8 Vol./L = 9.10 - 2 Mol./L = 5.06 - 4 Mol. Si/L = 2.02 - 3 S.A./cc = 1.81 4 Part. Rad. = 2.20 - 6

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 7.83-11 Mol./Area(2-6) = 4.11-11 Spec. S.A. = 3.27 1

DELTA CONC.	9.00 1	1 DYS	1.20 2	1.14 2	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	6.93 - 3	1.20 2	1.14 2	2.49 - 2	3.10 1	9.10 1	7.60 1	6.70 1	6.00 1	6.50 1
X VOL. LOST	3.03 - 4	1.61 - 2	2.49 - 2	1.09 - 3	3.19 - 2	3.78 - 2	4.29 - 2	4.76 - 2	5.26 - 2	5.26 - 2
AVG. FLUX	2.86-15	2.78-16	6.14-17	3.93-17	3.10-17	1.65 - 3	1.88 - 3	2.08 - 3	2.30 - 3	2.30 - 3
INS. FLUX	2.86-15	1.66-16	2.52-17	1.72-17	1.44-17	1.27-17	1.13-17	1.23-17	1.23-17	1.23-17

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 7.10-11 Mol./Area(2-6) = 3.44-11 Spec. S.A. = 4.32 1

DELTA CONC.	1.00 2	1 DYS	1.78 2	1.44 2	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	5.83 - 3	1.62 - 2	2.46 - 2	3.13 - 2	3.67 - 2	4.13 - 2	4.48 - 2	4.77 - 2	5.00 - 1c	5.00 - 1c
X VOL. LOST	3.37 - 4	9.38 - 4	1.42 - 3	1.81 - 3	2.12 - 3	2.39 - 3	2.59 - 3	2.76 - 3	2.76 - 3	2.76 - 3
AVG. FLUX	2.41-15	2.79-16	6.05-17	3.85-17	3.01-17	2.54-17	2.20-17	1.95-17	1.95-17	1.95-17
INS. FLUX	2.41-15	1.86-16	2.41-17	1.65-17	1.34-17	1.11-17	8.61-18	7.17-18	7.17-18	7.17-18

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 1.60-12 Mol./Area(2-6) = -1.03-11 Spec. S.A. = 3.50 1

DELTA CONC.	5.40 1	1 DYS	4.20 1	1.60 1	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	3.88 - 3	6.91 - 3	8.06 - 3	7.70 - 3	6.33 - 3	4.82 - 3	3.02 - 3	1.07 - 3	2.70 1	2.70 1
X VOL. LOST	1.82 - 4	3.24 - 4	3.78 - 4	3.61 - 4	2.97 - 4	2.26 - 4	1.41 - 4	5.06 - 5	5.75 - 4	5.75 - 4
AVG. FLUX	1.60-15	1.19-16	1.98-17	9.47-18	5.12-18	2.96-18	1.48-18	4.42-19	2.70 - 5	2.70 - 5
INS. FLUX	1.60-15	5.43-17	3.30-18	-8.85-19	-3.30-18	-3.72-18	-4.42-18	-4.78-18	-1.77-19	-1.77-19

DELTA CONC.	84 DYS	98 DYS	112 DYS
LAYERS LOST	-2.10 1	-1.50 1	-8.00
X VOL. LOST	-3.81 - 3	-4.89 - 3	-5.47 - 3
AVG. FLUX	-1.78 - 4	-2.29 - 4	-2.56 - 4
INS. FLUX	-7.82-19	-8.60-19	-8.41-19

pH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 3.65-11 Mol./Area(2-6) = 1.59-11 Spec. S.A. = 5.38 1

DELTA CONC.	7.00 1	1 DYS	1.21 2	1.05 2	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	3.27 - 3	8.94 - 3	1.38 - 2	1.78 - 2	2.04 - 2	2.21 - 2	2.36 - 2	2.45 - 2	2.45 - 2	2.45 - 2
X VOL. LOST	1.35-15	6.44 - 4	9.99 - 4	1.28 - 3	1.47 - 3	1.59 - 3	1.70 - 3	1.77 - 3	1.77 - 3	1.77 - 3
AVG. FLUX	1.35-15	1.54-16	3.41-17	2.19-17	1.67-17	1.36-17	1.16-17	1.00-17	1.00-17	1.00-17
INS. FLUX	1.35-15	1.01-16	1.41-17	9.79-18	6.33-18	4.37-18	3.45-18	2.42-18	2.42-18	2.42-18

DIOPSIDE

Den. = 3.25 Form. Wt. = 216 # Si Atoms / Form. = 2 Spec. S. A. = .75 Total S. A. = 1.50 Mol. Vol. = 66.4
 L Thickness = 4.80 - 8 Vol./L = 7.20 - 4 Mol./L = 1.08 - 5 Mol. Si/L = 2.16 - 5 S.A./cc = 2.00 2 Part. Rad. = 1.23 - 4
 PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 1.46 - 9 Mol./Area(2-6) = 1.17 - 9 Spec. S.A. = 8.70 - 1

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
6.00	2.00	4.30	4.60	5.60	5.20	5.70	6.10
1.78	7.75	2.42	3.42	5.09	6.64	8.34	1.01
2.42	1.05	2.79	4.65	6.92	9.03	1.13	1.38
7.18	1.29	4.91	4.09	4.06	3.97	3.93	4.05
7.18	1.04	3.37	3.27	3.99	3.70	4.06	4.34

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.17 - 9 Mol./Area(2-6) = 8.21 - 10 Spec. S.A. = 1.20

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
1.50	2.50	7.30	8.20	7.60	4.70	2.90	2.90
3.24	8.64	2.44	4.21	5.85	6.87	7.49	8.12
6.07	1.62	4.57	7.89	1.09	1.28	1.40	1.52
1.30	1.44	5.83	5.03	4.86	4.10	3.38	3.23
1.30	9.43	4.40	4.23	3.92	2.42	1.49	1.49

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 6.33 - 10 Mol./Area(2-6) = 4.88 - 10 Spec. S.A. = 1.16

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
4.00	1.50	2.60	2.80	2.60	2.60	3.00	4.10	3.40	2.20
8.94	4.24	1.00	1.63	2.21	2.79	3.46	4.38	5.14	5.63
1.62	7.69	1.82	2.95	4.00	5.06	6.27	7.93	9.31	1.02
3.59	7.10	2.40	1.95	1.76	1.67	1.63	1.74	1.53	1.34
3.59	5.85	1.62	1.49	1.30	1.38	1.60	2.19	9.08	5.87

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 9.11 - 10 Mol./Area(2-6) = 6.49 - 10 Spec. S.A. = 1.23

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
1.00	2.00	5.60	7.70	6.20	3.70	2.00	1.70
2.10	6.32	1.81	3.43	4.74	5.52	5.94	6.30
4.04	1.21	3.88	6.60	9.11	1.06	1.14	1.21
8.46	1.05	4.33	4.10	3.78	3.30	2.84	2.51
8.46	7.36	3.29	3.88	3.12	1.86	1.00	8.56

PH = 7.9-8.0 MicroM Dis. Si = 364.0 Mol./Area(0-6) = 6.73 - 11 Mol./Area(2-6) = 1.69 - 10 Spec. S.A. = 1.28

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
-6.00	-1.00	-1.90	-6.00	4.00	2.10	2.40	1.50
-1.21	-3.24	-2.70	-8.30	-7.49	-3.24	1.62	4.65
-2.42	-6.67	-1.41	-1.66	-1.49	-6.47	3.23	9.31
-4.88	-3.42	-1.69	-9.93	-5.97	-1.93	7.75	1.85
-4.88	-3.53	-1.07	-2.90	1.93	1.01	1.16	7.26

PH = 7.8-8.0 MicroM Dis. Si = 785.0 Mol./Area(0-6) = -1.99 - 10 Mol./Area(2-6) = -1.75 - 11 Spec. S.A. = 1.28

DELTA CONC.
 LAYERS LOST
 X VOL. LOST
 AVG. FLUX
 INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
-1.50	-1.50	-3.20	-1.20	-1.00	4.00	6.00	6.00
-3.03	-6.07	-1.25	-1.49	-1.70	-1.62	-1.49	-1.37
-6.07	-1.21	-2.51	-2.99	-3.40	-3.23	-2.99	-2.75
-1.22	-1.01	-3.00	-1.79	-1.35	-9.68	-7.16	-5.48
-1.22	-3.30	-1.80	-5.81	-4.84	1.93	2.90	2.90

THIS PAGE IS BEST QUALITY PRACTICABLE
 FROM COPY FURNISHED TO DDC

CHLORITE

Dea. = 3.00 Form. Wt. = 619 # Si Atoms / Form. = 3 Spec. S. A. = 4.00 Total S. A. = 8.00 Mol. Vol. = 206.3
L Thickness = 7.00 - 8 Vol./L = 5.60 - 3 Mol./L = 2.71 - 5 Mol. Si/L = 8.15 - 5 S.A./cc = 1.06 3 Part. Rad. = 2.50 - 5
pH = 8.3-8.5 MicroM Dis. SI = 1.8 Mol./Area(0-6) = 8.46-11 Mol./Area(2-6) = 5.95-11 Spec. S.A. = 4.03

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	4.00	9.00	1.40	1.20	1.30	1.20	1.30	1.40
LAYERS LOST	3.65	1.18	2.46	3.56	4.74	5.84	7.03	8.30
Z VOL. LOST	3.09	1.00	2.08	3.01	4.02	4.95	5.95	7.04
AVG. FLUX	1.03-15	1.00-16	4.15-17	3.00-17	2.66-17	2.46-17	2.36-17	2.33-17
INS. FLUX	1.03-15	1.01-16	2.51-17	1.84-17	2.00-17	1.84-17	2.00-17	2.15-17

pH = 7.6-7.9 MicroM Dis. SI = 3.9 Mol./Area(0-6) = 1.17-10 Mol./Area(2-6) = 6.92-11 Spec. S.A. = 3.25

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.00	1.40	1.80	1.30	1.40	1.20	1.10	1.00
Z VOL. LOST	1.13	2.71	4.75	6.22	7.81	9.17	1.04	1.15
AVG. FLUX	7.73	1.85	3.24	4.25	5.33	6.26	7.11	7.89
INS. FLUX	3.20-15	3.20-16	8.01-17	5.24-17	4.38-17	3.86-17	3.51-17	3.24-17
	3.20-15	1.95-16	4.00-17	2.48-17	2.67-17	2.28-17	2.09-17	1.90-17

pH = 8.3-8.5 MicroM Dis. SI = 105.4 Mol./Area(0-6) = -6.93-10 Mol./Area(2-6) = -3.60-10 Spec. S.A. = 7.90 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-2.00	-2.50	-2.50	-2.40	-1.90	-1.40	-1.00	-9.00	-1.40	-1.10
LAYERS LOST	-9.31	-2.09	-3.26	-4.37	-5.26	-5.91	-6.38	-6.79	-7.45	-7.96
Z VOL. LOST	-1.54	-3.48	-5.41	-7.27	-8.74	-9.82	-1.06	-1.12	-1.23	-1.32
AVG. FLUX	-2.63-14	-2.67-15	-5.49-16	-3.68-16	-2.95-16	-2.49-16	-2.15-16	-1.90-16	-1.56-16	-1.34-16
INS. FLUX	-2.63-14	-1.43-15	-2.28-16	-1.88-16	-1.49-16	-1.09-16	-7.84-17	-7.06-17	-5.49-17	-4.31-17

pH = 7.6-7.9 MicroM Dis. SI = 105.4 Mol./Area(0-6) = -3.36-11 Mol./Area(2-6) = -2.08-11 Spec. S.A. = 3.23

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-3.00	-4.00	-4.00	-4.00	-5.00	-4.00	-3.00	-2.00
LAYERS LOST	-3.41	-7.97	-8.51	-1.70	-2.27	-2.73	-3.07	-3.30
Z VOL. LOST	-2.32	-5.41	-8.51	-1.16	-1.54	-1.85	-2.08	-2.24
AVG. FLUX	-9.67-16	-9.40-17	-2.11-17	-1.43-17	-1.27-17	-1.15-17	-1.03-17	-9.27-18
INS. FLUX	-9.67-16	-5.60-17	-8.95-18	-7.67-18	-9.59-18	-7.67-18	-5.75-18	-3.83-18

BIOTITE

Den. = 3.20 Form. Wt. = 464 # Si Atoms / Form. = 3 Spec. S. A. = 5.50 Total S. A. = 11.00 Mol. Vol. = 145.0
L Thickness = 6.23-8 Vol./L = 6.85-3 Mol./L = 4.72-5 Mol. Si/L = 1.41-4 S.A./cc = 1.46 3 Part. Rad. = 1.70-5

pH = 8.3-8.5 Microm Dis. Si = 1.8 Mol./Area(0-6) = 2.12-10 Mol./Area(2-6) = 1.42-10 Spec. S.A. = 5.90

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	1.80	1.20	1.40	1.10	1.00	1.20	1.40
LAYERS LOST	9.85	2.85	5.42	7.59	1.01	1.20	1.41	1.64
X VOL. LOST	1.16	3.36	6.38	8.93	1.18	1.42	1.66	1.93
AVG. FLUX	3.53-15	4.26-16	1.15-16	8.09-17	7.18-17	6.43-17	6.03-17	5.85-17
INS. FLUX	3.53-15	2.91-16	6.37-17	4.62-17	5.35-17	4.20-17	4.41-17	4.93-17

pH = 8.3-8.5 Microm Dis. Si = 55.0 Mol./Area(0-6) = 3.33-11 Mol./Area(2-6) = 2.87-11 Spec. S.A. = 6.40

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	0.00	-2.00	1.00	8.00	1.00	1.20	1.00	1.00	1.00	1.20
LAYERS LOST	0.00	-9.08	3.63	7.27	1.18	1.72	2.13	2.59	3.04	3.58
X VOL. LOST	0.00	-1.16	4.64	9.28	1.50	2.20	2.72	3.30	3.88	4.46
AVG. FLUX	0.00	-1.35-17	7.75-18	7.75-18	8.39-18	9.20-18	9.10-18	9.20-18	8.11-18	7.65-18
INS. FLUX	0.00	-1.41-17	1.13-17	7.75-18	9.68-18	1.16-17	8.71-18	9.68-18	4.84-18	5.81-18

pH = 8.3-8.5 Microm Dis. Si = 105.4 Mol./Area(0-6) = -4.99-11 Mol./Area(2-6) = -2.60-11 Spec. S.A. = 1.11 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-2.30	-2.70	-2.10	-1.60	-2.00	-1.40	-1.40	-1.30	-9.00	-1.30
LAYERS LOST	-6.02	-1.31	-1.86	-2.27	-2.80	-3.17	-3.53	-3.87	-4.11	-4.45
X VOL. LOST	-1.33	-2.89	-4.11	-5.04	-6.20	-7.01	-7.83	-8.58	-9.10	-9.86
AVG. FLUX	-2.15-15	-1.95-16	-3.96-17	-2.42-17	-1.99-17	-1.68-17	-1.50-17	-1.37-17	-1.09-17	-0.49-18
INS. FLUX	-2.15-15	-1.10-16	-1.36-17	-8.93-18	-1.11-17	-7.82-18	-7.82-18	-7.26-18	-2.51-18	-3.63-18

	84 DYS	98 DYS	112 DYS
DELTA CONC.	-4.00	-1.30	-7.00
LAYERS LOST	-4.55	-1.89	-5.08
X VOL. LOST	-1.00	-1.08	-1.12
AVG. FLUX	-8.09-18	-7.46-18	-6.77-18
INS. FLUX	-1.11-18	-3.63-18	-1.95-18

BENTONITE (CRC) (CONT.)

PH = 7.9-8.0 MicroM Dis. Si = 364.0 Mol./Area(0-6) --1.95-11 Mol./Area(2-6) --1.07-11 Spec. S.A. = 4.00 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-2.00 1	-3.70 1	-3.70 1	-3.80 1	-2.10 1	-1.80 1	-2.00 1	-1.80 1
LAYERS LOST	-1.25 -3	-3.59 -3	-5.92 -3	-8.31 -3	-9.63 -3	-1.07 -2	-1.20 -2	-1.31 -2
X VOL. LOST	-6.75 -5	-1.92 -4	-3.17 -4	-4.45 -4	-5.16 -4	-5.77 -4	-6.44 -4	-7.05 -4
AVG. FLUX	-5.20-16	-6.18-17	-1.45-17	-1.02-17	-7.90-18	-6.62-18	-5.92-18	-5.39-18
INS. FLUX	-5.20-16	-4.18-17	-6.69-18	-5.89-18	-3.23-18	-2.79-18	-3.10-18	-2.79-18

PH = 7.8-8.0 MicroM Dis. Si = 781.0 Mol./Area(0-6) --8.01-11 Mol./Area(2-6) --2.88-11 Spec. S.A. = 4.00 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.50 2	-2.31 2	-1.66 2	-1.02 2	-6.80 1	-3.60 1	-5.10 1	-5.10 1
LAYERS LOST	-9.44 -3	-2.39 -2	-3.44 -2	-4.08 -2	-4.51 -2	-4.74 -2	-5.06 -2	-5.38 -2
X VOL. LOST	-5.06 -4	-1.28 -3	-1.84 -3	-2.19 -3	-2.41 -3	-2.54 -3	-2.71 -3	-2.88 -3
AVG. FLUX	-3.90-15	-4.13-16	-8.47-17	-5.03-17	-3.70-17	-2.91-17	-2.43-17	-2.20-17
INS. FLUX	-3.90-15	-2.61-16	-3.00-17	-1.58-17	-1.03-17	-5.58-18	-7.90-18	-7.90-18

PH = 7.9-8.0 MicroM Dis. Si = 364.0 Mol./Area(0-6) --1.76-11 Mol./Area(2-6) --9.73-12 Spec. S.A. = 4.43 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-2.00 1	-3.70 1	-3.70 1	-3.80 1	-2.10 1	-1.80 1	-2.00 1	-1.80 1
LAYERS LOST	-1.13 -3	-3.24 -3	-5.34 -3	-7.50 -3	-8.70 -3	-9.72 -3	-1.08 -2	-1.18 -2
X VOL. LOST	-6.75 -5	-1.92 -4	-3.17 -4	-4.45 -4	-5.16 -4	-5.77 -4	-6.44 -4	-7.05 -4
AVG. FLUX	-4.70-16	-5.58-17	-1.31-17	-9.23-18	-7.13-18	-5.98-18	-5.34-18	-4.87-18
INS. FLUX	-4.70-16	-3.78-17	-6.08-18	-5.31-18	-2.93-18	-2.51-18	-2.79-18	-2.51-18

PH = 7.8-8.0 MicroM Dis. Si = 781.0 Mol./Area(0-6) --7.89-11 Mol./Area(2-6) --2.84-11 Spec. S.A. = 4.06 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.50 2	-2.31 2	-1.66 2	-1.02 2	-6.80 1	-3.60 1	-5.10 1	-5.10 1
LAYERS LOST	-9.30 -3	-2.36 -2	-3.39 -2	-4.02 -2	-4.44 -2	-4.67 -2	-4.98 -2	-5.30 -2
X VOL. LOST	-5.06 -4	-1.28 -3	-1.84 -3	-2.19 -3	-2.41 -3	-2.54 -3	-2.71 -3	-2.88 -3
AVG. FLUX	-3.84-15	-4.07-16	-8.35-17	-4.95-17	-3.64-17	-2.87-17	-2.45-17	-2.17-17
INS. FLUX	-3.84-15	-2.57-16	-2.95-17	-1.55-17	-1.03-17	-5.49-18	-7.78-18	-7.78-18

EPIDOTE

Den. = 3.40 Form. Wt. = 498 # Si Atoms / Form. = 3 Spec. S. A. = .88 Total S. A. = 1.76 Mol. Vol. = 146.4
L Thickness = 6.25 - 8 Vol./L = 1.10 - 3 Mol./L = 7.51 - 6 Mol. Si/L = 2.25 - 5 S.A./cc = 2.34 2 Part. Rad. = 1.00 - 4
pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 7.88-10 Mol./Area(2-6) = 5.95-10 Spec. S.A. = 6.80 -1

MicroM Dis.	Si	1.8	Mol./Area(0-6)	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	1	2.30	1	1.80	1	1.90	1	2.90
LAYERS LOST	6.61	-3	1.50	-1	2.28	-1	3.83	-1	6.15
X VOL. LOST	1.24	-5	2.37	-4	3.29	-4	5.34	-4	8.90
AVG. FLUX	3.06	-3	3.19	-16	2.41	-16	2.02	-16	2.17
INS. FLUX	3.06	-3	6.66	-16	1.64	-16	1.73	-16	2.64

pH = 8.3-8.5		MicroM Dis. S1 = 105.4		Mol./Area(0-6) = 1.16-10		Mol./Area(2-6) = 9.50-11		Spec. S.A. = 7.10 - 1		
		1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-1.23	1.00	6.00	6.00	4.00	-2.00	0.00	1.00	1.20	9.00
LAYERS LOST	-1.23	-2	1.64	4.12	5.77	4.94	4.94	2.07	1.40	1.77
% VOL. LOST	-1.86	-5	2.48	5.32	8.71	7.47	7.47	1.36	2.11	2.67
AVG. FLUX	-4.40-15	-1.22-16	3.49-17	4.36-17	4.07-17	2.61-17	2.09-17	3.20-17	3.71-17	3.95-17
MS. FLUX	-4.40-15	6.37-17	6.11-17	5.23-17	3.49-17	4.74-17	0.00	8.73-17	5.23-17	3.92-17

	1 HR *	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	7.00	1.10	2.60	1.90	2.20	1.80	1.40	1.40
LAYERS LOST	3.86	9.94	2.43	3.48	4.69	5.99	6.46	7.23
% VOL. LOST	4.35	1.12	2.73	3.92	5.29	6.41	7.28	8.15
AVG. FLUX	1.37-14	1.47-15	5.14-16	3.68-16	3.31-16	3.01-16	2.73-16	2.55-16
WNS. FLUX	1.37-14	9.59-16	3.34-16	2.22-16	2.57-16	2.10-16	1.63-16	1.63-16

	1 HR *	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	5.00	8.00	9.00	8.00	8.00	7.00	2.00	4.00
LAYERS LOST	2.39	6.23	2	1.43	1	2.15	1	2.49
Z VOL. LOST	3.11	8.09	5	1.86	4	2.36	4	3.23
AVC. FLUX	8.53	2.23	16	1.52	16	1.14	16	8.80
INC. FLUX	8.53	5.93	16	1.06	16	1.13	17	4.06

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

HORNBLende

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

Den. = 3.20 Form. Wt. = 837 # Si Atoms / Form. = 7 Spec. S. A. = .72 Total S. A. = 1.44 Mol. Vol. = 261.5
L Thickness = 7.58 - 8 Vol./L = 1.09 - 3 Mol./L = 4.17 - 6 Mol. Si/L = 2.92 - 5 S.A./cc = 1.92 2 Part. Rad. = 1.30 - 4

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 5.10-10 Mol./Area(2-6) = 3.90-10 Spec. S.A. = 7.20 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	7.00	1.40	1.30	1.60	1.30	1.50	1.80
LAYERS LOST	5.13	3	2.30	2	9.23	1	2.05	1
X VOL. LOST	8.96	-6	4.03	-4	1.66	-1	2.51	-1
AVG. FLUX	2.89-15	5.42-16	1.03	-4	2.33	-4	3.58	-4
INS. FLUX	2.89-15	4.40-16	1.40-16	1.55-16	1.37-16	1.39-16	1.29-16	1.55-16

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 2.30-10 Mol./Area(2-6) = 1.48-10 Spec. S.A. = 1.19

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	3.00	5.00	1.80	1	1.00	1	8.00	8.00
LAYERS LOST	4.65	-3	1.24	-2	5.58	-2	1.00	-1
X VOL. LOST	1.34	-5	4.03	-2	8.84	-2	1.00	-1
AVG. FLUX	2.62-15	2.91-16	1.16	-4	2.10	-4	2.55	-4
INS. FLUX	2.62-15	1.90-16	1.09-16	5.21-17	5.73-17	5.21-17	4.16-17	4.16-17

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = 6.24-11 Mol./Area(2-6) = 6.24-11 Spec. S.A. = 7.80 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	0.00	1.00	-1.00	2.00	2.00	1.00	3.00	5.00	2.00	2.00
LAYERS LOST	0.00	2.36	-3	4.73	-3	1.18	-2	3.07	-2	4.02
X VOL. LOST	0.00	4.48	-6	8.96	-6	2.24	-5	5.82	-5	7.62
AVG. FLUX	0.00	5.56-17	0.00	7.94-18	1.05-17	9.93-18	1.27-17	1.72-17	1.49-17	1.35-17
INS. FLUX	0.00	5.80-17	-9.27-18	1.58-17	1.38-17	7.94-18	2.38-17	3.97-17	7.94-18	7.94-18

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -2.47-10 Mol./Area(2-6) = -1.05-10 Spec. S.A. = 8.50 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-9.00	-1.10	1	-9.00	-1.10	-2.00	-2.00	0.00	-2.00	3.00
LAYERS LOST	-1.95	-2	-6.95	-2	-1.12	-1	-1.21	-1	-1.26	-1
X VOL. LOST	-4.03	-5	-8.96	-5	-2.33	-4	-2.51	-4	-2.60	-4
AVG. FLUX	-1.10-14	-1.02-15	-2.33-16	-1.49-16	-1.26-16	-9.84-17	-8.16-17	-6.80-17	-5.28-17	-4.01-17
INS. FLUX	-1.10-14	-3.86-16	-1.02-16	-6.56-17	-8.02-17	-1.45-17	-1.45-17	0.00	-7.29-18	1.09-17

pH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 2.10-11 Mol./Area(2-6) = 8.42-12 Spec. S.A. = 8.90 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	0.00	0.00	3.00	4.00	3.00	-2.00	0.00	-3.00
LAYERS LOST	0.00	0.00	6.22	-3	2.66	-2	1.66	-2
X VOL. LOST	0.00	0.00	1.34	-5	4.48	-5	3.58	-5
AVG. FLUX	0.00	0.00	2.09-17	2.43-17	2.32-17	1.39-17	1.11-17	5.80-18
INS. FLUX	0.00	0.00	2.43-17	2.78-17	2.03-17	-1.39-17	0.00	-2.09-17

pH = 7.9-8.1 MicroM Dis. Si = 205.0 Mol./Area(0-6) = -1.45-10 Mol./Area(2-6) = -1.11-11 Spec. S.A. = 6.70 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-2.00	-4.00	-1.80	1	-1.00	-5.00	0.00	3.00
LAYERS LOST	-5.51	-3	-1.65	-2	-6.61	-2	-7.99	-2
X VOL. LOST	-8.96	-6	-2.69	-5	-1.03	-4	-1.30	-4
AVG. FLUX	-3.10-15	-3.88-16	-2.22-16	-1.06-16	-7.40-17	-6.70-17	-5.36-17	-4.01-17
INS. FLUX	-3.10-15	-2.70-16	-1.94-16	9.25-18	-9.25-18	-4.62-17	0.00	2.77-17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

NYALOCCLASTITE

Den. = 3.90 Form. Wt. = 116 # Si Atoms / Form. = 1 Spec. S. A. = .56 Total S. A. = 1.12 Mol. Vol. = 29.7
L Thickness = 3.67 -8 Vol./L = 4.11 -4 Mol./L = 1.38 -5 Mol. Si/L = 1.38 -5 S.A./cc = 1.49 2 Part. Rad. = 1.37 -4
pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 4.27-10 Mol./Area(2-6) = 2.75-10 Spec. S.A. = 6.40 -1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
5.00	8.00	1.30	1.10	9.00	9.00	9.00	9.00
2.37 -2	6.16 -2	1.23 -1	1.75 -1	2.18 -1	2.60 -1	3.03 -1	3.46 -1
2.17 -3	5.65 -3	1.13 -4	1.60 -4	2.00 -4	2.39 -4	2.78 -4	3.17 -4
8.13-13	8.81-16	2.51-16	1.79-16	1.48-16	1.33-16	1.24-16	1.17-16
8.13-15	5.66-16	1.46-16	1.06-16	8.71-17	8.71-17	8.71-17	8.71-17

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -6.46-11 Mol./Area(2-6) = -3.87-11 Spec. S.A. = 5.80 -1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
1.00	-3.00	-2.00	0.00	0.00	-3.00	-2.00	-1.00	-2.00
5.23 -3	-1.04 -2	-2.09 -2	-2.09 -2	-2.09 -2	-3.66 -2	-4.70 -2	-5.23 -2	-6.27 -2
4.34 -6	-8.69 -6	-1.73 -5	-1.73 -5	-1.73 -5	-3.04 -5	-3.91 -5	-4.34 -5	-5.21 -5
1.79-15	-1.49-16	-4.27-17	-2.13-17	-1.42-17	-1.87-17	-1.92-17	-1.78-17	-1.60-17
1.79-15	-2.34-16	-2.49-17	0.00	0.00	-3.20-17	-2.13-17	-1.06-17	-1.06-17

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 6.46-11 Mol./Area(2-6) = 7.75-11 Spec. S.A. = 5.80 -1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
-1.00	-2.00	1.00	2.00	4.00	2.00	2.00	2.00
-5.23 -3	-1.56 -2	-1.04 -2	0.00	2.09 -2	3.13 -2	4.18 -2	5.23 -2
-4.34 -6	-1.30 -5	-8.69 -6	0.00	1.73 -5	2.60 -5	3.47 -5	4.34 -5
-1.79-15	-2.24-16	-2.13-17	0.00	1.42-17	1.60-17	1.71-17	1.78-17
-1.79-15	-1.56-16	1.24-17	2.13-17	4.27-17	2.13-17	2.13-17	2.13-17

HYPERSTHENE

Den. = 3.90 Form. Wt. = 116 # Si Atoms / Form. = 1 Spec. S. A. = 1.10 Total S. A. = 2.20 Mol. Vol. = 29.7
L Thickness = 3.67 - 8 Vol./L = 8.08 - 4 Mol./L = 2.71 - 5 Mol. Si/L = 2.71 - 5 S.A./cc = 2.93 2 Part. Rad. = 6.99 - 5

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 7.14-10 Mol./Area(2-6) = 4.81-10 Spec. S.A. = 1.06

DELTA CONC.	5.00	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.43 - 2	2.70	1	4.00	1	3.40	1	2.10	1
X VOL. LOST	2.17 - 3	7.44	2	1.88	1	2.86	1	4.35	1
AVG. FLUX	4.91-15	1.13	4	2.87	4	4.34	4	6.61	4
INS. FLUX	4.91-15	8.97-16	2.72-16	1.98-16	2.92-16	2.55-16	1.81-16	1.34-16	1.57-16

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 5.65-10 Mol./Area(2-6) = 3.35-10 Spec. S.A. = 1.34

DELTA CONC.	1.00	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	2.26 - 2	2.00	1	5.20	1	3.20	1	2.20	1
X VOL. LOST	4.34 - 5	6.79	2	1.85	1	2.58	1	3.66	1
AVG. FLUX	7.77-15	1.30	4	3.56	4	4.95	4	7.04	4
INS. FLUX	7.77-15	9.71-16	3.79-16	2.63-16	2.15-16	1.87-16	1.01-16	1.68-16	1.25-16

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 4.30-10 Mol./Area(2-6) = 3.82-10 Spec. S.A. = 9.40 - 1

DELTA CONC.	-3.00	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
LAYERS LOST	-9.68 - 3	6.00	1	9.00	1	1.80	1	2.10	1	2.50	1
X VOL. LOST	-1.30 - 5	9.68	3	3.87	2	9.68	2	2.67	1	3.48	1
AVG. FLUX	-3.32-15	1.30	5	5.21	5	1.30	4	3.61	4	4.69	4
INS. FLUX	-3.32-15	2.89-16	6.92-17	1.18-16	8.57-17	5.93-17	1.38-16	1.51-16	1.64-16	1.09-16	1.04-16

DELTA CONC.	1.20	84 DYS	98 DYS	112 DYS
LAYERS LOST	5.52 - 1	1.20	1	1.20
X VOL. LOST	7.43 - 4	5.90	1	7.96
AVG. FLUX	9.39-17	8.62-17	3.95-17	
INS. FLUX	3.95-17			

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 3.20-10 Mol./Area(2-6) = 1.94-10 Spec. S.A. = 1.10

DELTA CONC.	4.00	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	1.10 - 2	7.00	1	2.60	1	1.30	1	1.00	1
X VOL. LOST	1.73 - 5	3.03	2	1.02	1	1.76	1	2.31	1
AVG. FLUX	3.78-15	4.78	5	1.60	4	2.21	4	3.65	4
INS. FLUX	3.78-15	2.88-16	1.70-16	2.08-16	1.43-16	1.20-16	1.04-16	9.46-17	8.83-17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

HYPERSTHENE (CONT.)

PH = 8.3-8.5 Microm Dis. Si = 205.0 Mol./Area(0-6) = -9.74-12 Mol./Area(2-6) = 8.52-11 Spec. S.A. = 1.54

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-1.00	-2.10	-8.00	5.00	3.00	1.00	9.00	8.00	2.00	5.00
LAYERS LOST	-1.97	-6.10	-7.68	-6.69	-6.10	-4.13	-2.36	-7.88	-3.94	-3.91
Z VOL. LOST	-4.34	-1.34	-1.69	-1.47	-1.34	-9.13	-5.21	-1.73	-8.69	-1.30
AVG. FLUX	-6.75	-8.73	-1.57	-6.84	-4.16	-2.11	-3.66	-2.68	-1.00	1.20
INS. FLUX	-6.70	-6.17	-3.75	2.01	1.20	4.02	3.62	3.22	4.02	1.00

PH = 7.9-8.0 Microm Dis. Si = 364.0 Mol./Area(0-6) = -2.46-10 Mol./Area(2-6) = -1.03-10 Spec. S.A. = 1.20

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.00	-2.00	-1.60	-1.60	-1.10	-2.00	-2.00	-2.00
LAYERS LOST	-2.52	-7.58	-1.16	-1.56	-1.84	-1.89	-1.94	-1.99
Z VOL. LOST	-4.34	-1.30	-2.00	-2.69	-3.17	-3.26	-3.34	-3.43
AVG. FLUX	-8.68	-1.08	-2.37	-1.60	-1.25	-9.68	-7.95	-6.80
INS. FLUX	-8.68	-7.54	-9.64	-8.26	-5.68	-1.03	-1.03	-1.03

ILLITE

Den. = 2.80 Form. Wt. = 398 # Si Atoms / Form. = 3 Spec. S. A. = 34.00 Total S. A. = 68.00 Mol. Vol. = 142.1
L Thickness = 6.19 -8 Vol./L = 4.20 -2 Mol./L = 2.96 -4 Mol. Si/L = 8.88 -4 S.A./cc = 9.06 3 Part. Rad. = 3.15 -6

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 2.67-11 Mol./Area(2-6) = 1.45-11 Spec. S.A. = 2.03 1

DELTA CONC.	1.70 1	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	2.40 -3	2.40 1	2.50 1	1.90 1	1.80 1	1.40 1	1.40 1	1.40 1
X VOL. LOST	8.45 -5	2.79 -3	9.33 -3	1.20 -2	1.45 -2	1.65 -2	1.85 -2	2.04 -2
AVG. FLUX	8.72-16	2.03 -4	3.28 -4	4.22 -4	5.12 -4	5.82 -4	6.51 -4	7.21 -4
INS. FLUX	8.72-16	8.76-17	8.90-18	1.29-17	1.04-17	8.93-18	8.00-18	7.38-18
		5.35-17	5.80-18	5.80-18	5.49-18	4.27-18	4.27-18	4.27-18

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 3.50-11 Mol./Area(2-6) = 8.55-12 Spec. S.A. = 3.07 1

DELTA CONC.	5.00 1*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.67 -3	1.36 2	3.10 1	2.10 1	1.70 1	1.40 1	1.00 1	8.00 c
X VOL. LOST	2.48 -4	1.73 -2	2.02 -2	2.22 -2	2.38 -2	2.51 -2	2.60 -2	2.68 -2
AVG. FLUX	1.69-15	9.25 -4	1.07 -3	1.18 -3	1.26 -3	1.33 -3	1.38 -3	1.42 -3
INS. FLUX	1.69-15	2.62-16	4.38-17	2.40-17	1.71-17	1.35-17	1.12-17	9.66-18
		2.00-16	7.30-18	4.24-18	3.43-18	2.82-18	2.01-18	1.61-18

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = -9.60-12 Mol./Area(2-6) = -7.35-12 Spec. S.A. = 2.50 1

DELTA CONC.	0.00	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	0.00	-8.00 1	-7.00 1	-1.00 1	-1.00 1	-9.00 1	-1.00 1	-1.00 1
X VOL. LOST	0.00	-9.18 -4	-1.72 -3	-2.86 -3	-4.01 -3	-5.05 -3	-6.19 -3	-7.34 -3
AVG. FLUX	0.00	-3.97 -5	-7.46 -5	-1.24 -4	-1.74 -4	-2.18 -4	-2.68 -4	-3.18 -4
INS. FLUX	0.00	-1.38-17	-3.72-18	-3.10-18	-2.89-18	-2.72-18	-2.67-18	-2.64-18
		-1.44-17	-2.02-18	-2.42-18	-2.48-18	-2.23-18	-2.48-18	-2.48-18
								-8.68-19
								-2.48-19
								-1.90-18
								-7.44-19

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -2.75-11 Mol./Area(2-6) = -1.73-11 Spec. S.A. = 3.02 1

DELTA CONC.	-2.10 1	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-1.99 -3	-2.60 1	-3.50 1	-3.20 1	-3.30 1	-2.30 1	-2.50 1	-2.70 1
X VOL. LOST	-1.04 -4	-4.46 -3	-7.79 -3	-1.08 -2	-1.39 -2	-1.61 -2	-1.85 -2	-2.10 -2
AVG. FLUX	-7.24-16	-6.75-17	-1.68-17	-5.67 -4	-7.31 -4	-8.45 -4	-9.70 -4	-1.10 -3
INS. FLUX	-7.24-16	-3.89-17	-8.38-18	-1.17-17	-1.00-17	-8.72-18	-8.00-18	-7.59-18
				-6.56-18	-6.77-18	-4.72-18	-5.13-18	-5.54-18
								-2.36-18
								-2.05-18

DELTA CONC.	-1.50 1	84 DYS	98 DYS	112 DYS
LAYERS LOST	-2.66 -2	-1.70 1	-1.00 1	-1.00 1
X VOL. LOST	-1.39 -3	-2.82 -2	-2.91 -2	-2.91 -2
AVG. FLUX	-4.79-18	-1.47 -3	-1.52 -3	-1.52 -3
INS. FLUX	-1.53-18	-4.35-18	-3.93-18	-3.93-18
		-1.74-18	-1.02-18	-1.02-18

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = -1.29-11 Mol./Area(2-6) = -8.24-12 Spec. S.A. = 3.41 1

DELTA CONC.	-1.00 1*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-8.41 -4	-1.50 1	-1.80 1	-1.50 1	-1.50 1	-1.50 1	-1.50 1	-1.50 1
X VOL. LOST	-4.97 -5	-2.10 -3	-3.61 -3	-4.88 -3	-6.14 -3	-7.40 -3	-8.66 -3	-9.93 -3
AVG. FLUX	-3.05-16	-1.24 -4	-2.13 -4	-2.88 -4	-3.63 -4	-4.37 -4	-5.12 -4	-5.87 -4
INS. FLUX	-3.05-16	-3.18-17	-7.81-18	-5.27-18	-4.42-18	-4.00-18	-3.74-18	-3.57-18
		-1.99-17	-3.81-18	-2.72-18	-2.72-18	-2.72-18	-2.72-18	-2.72-18

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

KAOLINITE

Den. = 2.60 Form. Wt. = 516 # Si Atoms / Form. = 4 Spec. S. A. = 8.60 Total S. A. = 17.20 Mol. Vol. = 198.4
L Thickness = 6.91 -8 Vol./L = 1.19 -2 Mol./L = 5.99 -5 Mol. Si/L = 2.39 -4 S.A./cc = 2.29 3 Part. Rad. = 1.34 -5
PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 6.99-12 Mol./Area(2-6) = 8.39-12 Spec. S.A. = 8.04

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-2.00	-1.00	0.00	1.00	2.00	4.00	5.00	6.00
LAYERS LOST	-6.68	-1.00	-3	-6.68	0.00	1.33	3.00	5.01
X VOL. LOST	-9.67	-1.45	-5	-9.67	0.00	1.93	4.35	7.25
AVG. FLUX	-2.59-16	-1.61-17	-2.31-18	-7.71-19	0.00	7.71-19	1.38-18	1.92-18
INS. FLUX	-2.59-16	-5.63-18	0.00	7.71-19	1.54-18	3.08-18	3.85-18	4.62-18

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 2.69-12 Mol./Area(2-6) = 6.29-12 Spec. S.A. = 8.34

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-2.00	-4.00	-2.00	2.00	3.00	3.00	3.00	3.00
LAYERS LOST	-6.44	-1.93	-3	-1.93	-9.67	0.00	9.67	1.93
X VOL. LOST	-9.67	-2.90	-5	-2.90	-1.45	0.00	1.45	2.90
AVG. FLUX	-2.49-16	-3.12-17	-5.94-18	-2.23-18	-7.43-19	0.00	4.46-19	7.43-19
INS. FLUX	-2.49-16	-2.17-17	-1.73-18	1.48-18	2.23-18	2.23-18	2.23-18	2.23-18

PH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = -6.00-11 Mol./Area(2-6) = -1.89-11 Spec. S.A. = 8.30

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
DELTA CONC.	-4.00	-3.10	-2.00	-1.70	-3.72	-5.00	-6.00	-7.00	-7.00
LAYERS LOST	-1.29	-2	-2.94	-3.49	-2	-3.88	-4.08	-4.30	-4.24
X VOL. LOST	-1.93	-4	-4.40	-5.22	-4	-5.80	-6.09	-6.43	-6.33
AVG. FLUX	-5.02-15	-3.71-16	-6.79-17	-4.03-17	-2.86-17	-2.24-17	-1.88-17	-1.65-17	-1.22-17
INS. FLUX	-5.02-15	-1.69-16	-1.74-17	-1.26-17	-5.22-18	-3.73-18	-4.48-18	-5.22-18	7.47-19

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -1.17-10 Mol./Area(2-6) = -4.88-11 Spec. S.A. = 8.60

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-5.80	-5.70	-4.20	-3.10	-2.70	-1.80	-1.80	-1.80	-1.10	-1
LAYERS LOST	-1.81	-2	-4.90	-5.87	-2	-7.28	-7.84	-8.41	-8.75	-9.03
X VOL. LOST	-2.80	-4	-5.56	-9.09	-4	-1.04	-1.12	-1.21	-1.30	-1.30
AVG. FLUX	-7.02-15	-5.80-16	-1.13-16	-6.77-17	-5.16-17	-4.19-17	-3.61-17	-3.23-17	-2.52-17	-2.08-17
INS. FLUX	-7.02-15	-3.00-16	-3.53-17	-2.23-17	-1.94-17	-1.29-17	-1.29-17	-1.29-17	-3.96-18	-3.24-18

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -4.68-11 Mol./Area(2-6) = 4.01-12 Spec. S.A. = 8.40

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-5.40	-5.40	-6.00	3.00	4.00	0.00	2.00	0.00
LAYERS LOST	-1.72	-2	-3.45	-2	-3.42	-2	-3.36	-2
X VOL. LOST	-2.61	-4	-5.22	-5.36	-4	-5.17	-5.07	-4
AVG. FLUX	-6.69-15	-5.58-16	-8.41-17	-4.09-17	-2.63-17	-1.97-17	-1.55-17	-1.29-17
INS. FLUX	-6.69-15	-2.31-16	-5.16-18	2.21-18	2.95-18	0.00	1.47-18	0.00

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

K-FELDSPAR

Den. = 2.56 Form. Wt. = 278 # Si Atoms / Form. = 3 Spec. S.A. = .75 Total S.A. = 1.50 Mol. Vol. = 108.5
L Thickness = 5.65 - 8 Vol./L = 8.48 - 4 Mol./L = 7.81 - 6 Mol. Si/L = 2.34 - 5 S.A./cc = 2.00 2 Part. Rad. = 1.56 - 4
PH = 8.1-8.3 MicroM Dis. Si = 5.6 Mol./Area(0-6) = 3.87-10 Mol./Area(2-6) = 2.15-10 Spec. S.A. = 6.10 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	6.00	1.00	1.20	1.00	1.00	1.00	1.00	1.00
LAYERS LOST	2.35	2.29	2.10	1.45	1.72	2.00	2.24	2.47
Z VOL. LOST	2.08	5.56	9.73	1.28	1.52	1.77	1.98	2.18
AVG. FLUX	1.02-14	1.13-15	2.84-16	1.88-16	1.49-16	1.29-16	1.15-16	1.06-16
INS. FLUX	1.02-14	7.42-16	1.42-16	9.14-17	7.11-17	7.11-17	6.09-17	6.09-17

PH = 7.6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 1.65-10 Mol./Area(2-6) = 1.04-10 Spec. S.A. = 6.10 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	3.00	3.00	4.00	3.00	3.00	3.00	4.00	4.00
LAYERS LOST	1.17	2.35	3.93	5.11	6.29	7.47	9.04	1.06
Z VOL. LOST	1.04	2.08	3.47	4.51	5.56	6.60	7.99	9.38
AVG. FLUX	5.12-15	4.26-16	1.01-16	6.60-17	5.42-17	4.82-17	4.67-17	4.57-17
INS. FLUX	5.12-15	2.22-16	4.74-17	3.04-17	3.04-17	3.04-17	4.06-17	4.06-17

PH = 7.8-8.0 MicroM Dis. Si = 114.0 Mol./Area(0-6) = -2.77-10 Mol./Area(2-6) = -9.72-11 Spec. S.A. = 8.10 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.00	-1.40	-1.50	-1.20	-8.00	-2.00	2.00	-1.00
LAYERS LOST	-2.96	-7.10	-1.15	-1.51	-1.74	-1.80	-1.74	-1.77
Z VOL. LOST	-3.47	-8.34	-1.35	-1.77	-2.05	-2.11	-2.05	-2.08
AVG. FLUX	-1.28-14	-1.28-15	-2.98-16	-1.95-16	-1.50-16	-1.16-16	-9.03-17	-7.65-17
INS. FLUX	-1.28-14	-7.82-16	-1.33-16	-9.18-17	-6.12-17	-1.53-17	1.53-17	-7.65-18

KXANITE

Des. = 3.60 Form. Wt. = 162 # Si Atoms. / Form. = 1 Spec. S.A. = .94 Total S.A. = 1.88 Mol. Vol. = 45.0
L Thickness = 4.21 - 8 Vol./L = 7.93 - 4 Mol./L = 1.76 - 5 S.A./cc = 2.50 2 Part. Rad. = 8.86 - 5

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 3.40-10 Mol./Area(2-6) = 2.92-10 Spec. S.A. = 6.60 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	4.00	6.00	9.00	6.00	8.00	8.00	9.00	1.00
LAYERS LOST	2.42 - 2	6.05 - 2	1.15 - 1	1.51 - 1	1.99 - 1	2.48 - 1	3.02 - 1	3.63 - 1
X VOL. LOST	2.42 - 5	6.07 - 5	1.15 - 4	1.51 - 4	2.00 - 4	2.49 - 4	3.03 - 4	3.64 - 4
AVG. FLUX	6.31-15	6.37-16	1.78-16	1.17-16	1.03-16	9.62-17	9.39-17	9.39-17
INS. FLUX	6.31-15	4.11-16	9.86-17	5.63-17	7.51-17	7.51-17	8.45-17	9.39-17

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.56-10 Mol./Area(2-6) = 9.37-11 Spec. S.A. = 8.40 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	3.00	4.00	7.00	4.00	5.00	4.00	4.00	4.00
LAYERS LOST	1.42 - 2	3.33 - 2	6.66 - 2	8.56 - 2	1.09 - 1	1.28 - 1	1.47 - 1	1.66 - 1
X VOL. LOST	1.82 - 5	4.25 - 5	8.50 - 5	1.09 - 4	1.39 - 4	1.64 - 4	1.88 - 4	2.12 - 4
AVG. FLUX	3.72-15	3.61-16	1.03-16	6.64-17	5.65-17	4.98-17	4.57-17	4.30-17
INS. FLUX	3.72-15	2.15-16	6.02-17	2.95-17	3.69-17	2.95-17	2.95-17	2.95-17

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = -1.43-10 Mol./Area(2-6) = -8.73-11 Spec. S.A. = 7.30 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-1.00	-4.00	-6.00	-3.00	-4.00	-5.00	-3.00	-2.00	-2.00	0.00
LAYERS LOST	-5.47 - 3	-2.73 - 2	-6.02 - 2	-7.66 - 2	-9.86 - 2	-1.26 - 1	-1.42 - 1	-1.53 - 1	-1.64 - 1	-1.64 - 1
X VOL. LOST	-6.07 - 6	-3.03 - 5	-6.68 - 5	-8.50 - 5	-1.09 - 4	-1.39 - 4	-1.57 - 4	-1.70 - 4	-1.82 - 4	-1.82 - 4
AVG. FLUX	-1.42-15	-2.97-16	-9.34-17	-5.94-17	-5.09-17	-4.88-17	-4.41-17	-3.96-17	-3.18-17	-2.54-17
INS. FLUX	-1.42-15	-2.48-16	-5.94-17	-2.54-17	-3.39-17	-4.24-17	-2.54-17	-1.69-17	-8.49-18	0.00

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -4.54-10 Mol./Area(2-6) = -2.10-10 Spec. S.A. = 8.00 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-1.20	-2.00	-2.00	-1.30	-1.20	-1.00	-6.00	-4.00	-3.00	-2.00
LAYERS LOST	-5.99 - 2	-1.59 - 1	-2.59 - 1	-3.24 - 1	-3.84 - 1	-4.34 - 1	-4.64 - 1	-4.84 - 1	-4.99 - 1	-5.09 - 1
X VOL. LOST	-7.29 - 5	-1.94 - 4	-3.15 - 4	-3.34 - 4	-4.67 - 4	-5.28 - 4	-5.64 - 4	-5.89 - 4	-6.07 - 4	-6.19 - 4
AVG. FLUX	-1.56-14	-1.73-15	-4.03-16	-2.51-16	-1.98-16	-1.68-16	-1.44-16	-1.25-16	-9.68-17	-7.90-17
INS. FLUX	-1.56-14	-1.13-15	-1.80-16	-1.00-16	-9.30-17	-7.75-17	-4.65-17	-3.10-17	-1.16-17	-7.75-18

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = -1.70-10 Mol./Area(2-6) = -7.50-11 Spec. S.A. = 5.50 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-3.00	-5.00	-6.00	-4.00	0.00	-3.00	-2.00	-2.00
LAYERS LOST	-2.18 - 2	-5.81 - 2	-1.01 - 1	-1.30 - 1	-1.30 - 1	-1.52 - 1	-1.67 - 1	-1.81 - 1
X VOL. LOST	-7.29 - 5	-4.86 - 5	-8.50 - 5	-1.09 - 4	-1.09 - 4	-1.27 - 4	-1.39 - 4	-1.51 - 4
AVG. FLUX	-5.68-15	-6.31-16	-1.57-16	-1.01-16	-6.76-17	-5.91-17	-5.18-17	-4.69-17
INS. FLUX	-5.68-15	-4.11-16	-7.89-17	-4.50-17	0.00	-3.38-17	-2.25-17	-2.25-17

MONTMORILLONITE

Den. = 2.00 Form. Wt. = 360 # Si Atoms / Form. = 4 Spec. S. A. = 66.00 Total S. A. = 132.00 Mol. Vol. = 180.0
 L Thickness = 6.69 - 8 Vol./L = 8.84 - 2 Mol./L = 4.91 - 4 Mol. Si/L = 1.96 - 3 S.A./cc = 1.76 4 Part. Rad. = 2.27 - 6

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 5.46-11 Mol./Area(2-6) = 2.96-11 Spec. S.A. = 5.51 1

DELTA CONC.	1.04 - 2	1.38 - 2	1.26 - 2	1.04 - 2	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.75 - 3	1.10 - 2	1.68 - 2	2.15 - 2	9.50 - 1	7.90 - 1	7.90 - 1	7.80 - 1
X VOL. LOST	3.51 - 4	8.16 - 4	1.24 - 3	1.59 - 3	2.59 - 2	2.95 - 2	3.31 - 2	3.67 - 2
AVG. FLUX	1.96-15	1.30-16	4.14-17	2.65-17	1.91 - 3	2.18 - 3	2.44 - 3	2.71 - 3
INS. FLUX	1.96-15	1.13-16	1.65-17	1.17-17	2.12-17	1.81-17	1.63-17	1.50-17
					1.06-17	8.88-18	8.88-18	8.77-18

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 6.99-11 Mol./Area(2-6) = 3.59-11 Spec. S.A. = 5.31 1

DELTA CONC.	1.00 - 2*	2.05 - 2	1.76 - 2	1.41 - 2	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.74 - 3	1.64 - 2	2.28 - 2	2.95 - 2	1.15 - 2	9.30 - 1	8.00 - 1	8.00 - 1
X VOL. LOST	3.37 - 4	1.02 - 3	1.62 - 3	2.09 - 3	3.49 - 2	3.93 - 2	4.31 - 2	4.69 - 2
AVG. FLUX	1.96-15	2.49-16	5.61-17	3.63-17	2.48 - 3	2.80 - 3	3.07 - 3	3.34 - 3
INS. FLUX	1.96-15	1.74-16	2.39-17	1.64-17	2.86-17	2.42-17	2.12-17	1.92-17
					1.34-17	1.08-17	9.34-18	9.34-18

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = 1.72-10 Mol./Area(2-6) = 6.62-11 Spec. S.A. = 8.10

DELTA CONC.	8.00 - 1	8.20 - 1	6.80 - 1	4.50 - 1	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
LAYERS LOST	2.48 - 2	5.03 - 2	7.15 - 2	8.55 - 2	3.70 - 2	2.60 - 1	2.00 - 1	1.50 - 1	1.70 - 1	1.40 - 1
X VOL. LOST	2.69 - 4	5.46 - 4	7.76 - 4	9.28 - 4	9.70 - 2	1.05 - 1	1.11 - 1	1.16 - 1	1.21 - 1	1.25 - 1
AVG. FLUX	1.02-14	8.68-16	1.76-16	1.05-16	1.03 - 3	1.14 - 3	1.20 - 3	1.25 - 3	1.31 - 3	1.36 - 3
INS. FLUX	1.02-14	4.58-16	6.07-17	3.44-17	7.96-17	6.46-17	5.48-17	4.75-17	3.73-17	3.09-17
					2.83-17	1.99-17	1.53-17	1.14-17	6.50-18	5.35-18

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -1.96-12 Mol./Area(2-6) = -1.14-11 Spec. S.A. = 4.00 1

DELTA CONC.	5.20 - 1	3.90 - 1	1.00 - 1	-1.00 - 1	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
LAYERS LOST	3.27 - 3	5.73 - 3	6.36 - 3	5.73 - 3	-2.00 - 1	-2.80 - 1	-3.00 - 1	-3.40 - 1	-3.30 - 1	-3.10 - 1
X VOL. LOST	1.75 - 4	3.07 - 4	3.40 - 4	3.07 - 4	4.47 - 3	2.70 - 3	8.18 - 4	-1.32 - 3	-3.40 - 3	-5.35 - 3
AVG. FLUX	1.35-15	9.87-17	1.56-17	7.05-18	2.39 - 4	1.45 - 4	4.38 - 5	-7.08 - 5	-1.82 - 4	-2.86 - 4
INS. FLUX	1.35-15	4.41-17	1.80-18	-1.55-18	3.66-18	1.66-18	4.03-19	-5.42-19	-1.04-18	-1.31-18
					-3.10-18	-4.34-18	-4.65-18	-5.27-18	-2.55-18	-2.40-18

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 6.63-11 Mol./Area(2-6) = 3.26-11 Spec. S.A. = 3.26 1

DELTA CONC.	7.00 - 1*	1.21 - 2	1.02 - 2	7.70 - 1	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	5.40 - 3	1.47 - 2	2.26 - 2	2.85 - 2	6.30 - 1	4.80 - 1	4.80 - 1	4.80 - 1
X VOL. LOST	2.36 - 4	6.44 - 4	9.88 - 4	1.24 - 3	3.34 - 2	3.71 - 2	4.08 - 2	4.45 - 2
AVG. FLUX	2.23-15	2.54-16	5.57-17	3.51-17	1.46 - 3	1.62 - 3	1.78 - 3	1.94 - 3
INS. FLUX	2.23-15	1.68-16	2.26-17	1.46-17	2.74-17	2.28-17	2.01-17	1.82-17
					1.19-17	9.12-18	9.12-18	9.12-18

pH = 7.9-8.0 MicroM Dis. Si = 364.0 Mol./Area(0-6) = -3.13-11 Mol./Area(2-6) = -1.64-11 Spec. S.A. = 4.00 1

DELTA CONC.	-4.00 - 1*	-6.70 - 1	-5.20 - 1	-5.60 - 1	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-2.51 - 3	-6.73 - 3	-1.00 - 2	-1.35 - 2	-3.70 - 1	-2.90 - 1	-2.40 - 1	-2.90 - 1
X VOL. LOST	-1.35 - 4	-3.61 - 4	-5.36 - 4	-7.25 - 4	-1.58 - 2	-1.76 - 2	-1.92 - 2	-2.10 - 2
AVG. FLUX	-1.04-15	-1.16-16	-2.46-17	-1.66-17	-8.50 - 4	-9.48 - 4	-1.02 - 3	-1.12 - 3
INS. FLUX	-1.04-15	-7.58-17	-9.40-18	-8.68-18	-1.30-17	-1.08-17	-9.45-18	-8.62-18
					-5.73-18	-4.89-18	-3.72-18	-4.89-18

THIS PAGE IS BEST QUALITY PRACTICABLE
 FROM COPY FURNISHED TO DDC

MUSCOVITE

Den. = 2.80 Form. Wt. = 398 # Si Atoms / Form. = 3 Spec. S. A. = 9.40 Total S. A. = 18.80 Mol. Vol. = 142.1
L Thickness = 6.19 - 8 Vol./L = 1.16 - 2 Mol./L = 8.18 - 5 Mol. Si/L = 2.45 - 4 S.A./cc = 2.50 3 Part. Rad. = 1.13 - 5
pH = 8.0-8.3 MicroM Dis. Si = 5.9 Mol./Area(0-6) = 6.11-11 Mol./Area(2-6) = 4.37-11 Spec. S.A. = 8.40

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	8.00	1.30	1.80	1.90	1.90	2.00	2.00	2.00
LAYERS LOST	2.73	3	1.33	1.98	2.63	3.31	3.99	4.68
Z VOL. LOST	3.97	5	1.04	2.88	3.83	4.82	5.82	6.81
AVG. FLUX	9.92-16	1.08-16	2.87-17	2.14-17	1.89-17	1.78-17	1.72-17	1.68-17
INS. FLUX	9.92-16	7.00-17	1.55-17	1.40-17	1.40-17	1.47-17	1.47-17	1.47-17

pH = .6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 8.88-11 Mol./Area(2-6) = 5.75-11 Spec. S.A. = 8.40

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	1.50	1.60	2.90	3.00	2.90	2.60	2.20	2.20
LAYERS LOST	5.12	3	1.40	3.41	4.40	5.29	6.04	6.79
Z VOL. LOST	7.46	5	2.03	4.97	6.41	7.71	8.80	9.90
AVG. FLUX	1.86-15	2.11-16	5.16-17	3.69-17	3.17-17	2.86-17	2.61-17	2.44-17
INS. FLUX	1.86-15	1.40-16	2.49-17	2.21-17	2.14-17	1.91-17	1.62-17	1.62-17

pH = 7.8-8.0 MicroM Dis. Si = 114.0 Mol./Area(0-6) = -2.01-10 Mol./Area(2-6) = -1.17-10 Spec. S.A. = 8.20

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-4.00	-7.20	-7.00	-6.50	-5.80	-5.10	-4.40	-4.00
LAYERS LOST	-1.39	-2	-3.91	-8.64	-1.06	-1.24	-1.39	-1.53
Z VOL. LOST	-1.98	-4	-5.57	-9.05	-1.51	-1.77	-1.98	-2.18
AVG. FLUX	-5.08-15	-5.92-16	-1.37-16	-9.33-17	-7.68-17	-6.72-17	-6.04-17	-5.34-17
INS. FLUX	-5.08-15	-3.97-16	-6.17-17	-4.91-17	-4.38-17	-3.85-17	-3.32-17	-3.02-17

pH = 7.6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 7.46-11 Mol./Area(2-6) = 4.83-11 Spec. S.A. = 1.00 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	1.50	1.60	2.90	3.00	2.90	2.60	2.20	2.20
LAYERS LOST	4.30	3	1.17	2.86	3.70	4.44	5.07	5.71
Z VOL. LOST	7.46	5	2.03	4.97	6.41	7.71	8.80	9.90
AVG. FLUX	1.56-15	1.77-16	4.34-17	3.10-17	2.66-17	2.40-17	2.19-17	2.05-17
INS. FLUX	1.56-15	1.17-16	2.09-17	1.86-17	1.79-17	1.61-17	1.36-17	1.36-17

NEPHELINE

Den. = 2.60 Form. Wt. = 142 # Si Atoms / Form. = 1 Spec. S. A. = .61 Total S. A. = 1.22 Mol. Vol. = 54.6
L Thickness = 4.50 - 8 Vol./L = 5.49 - 4 Mol./L = 1.00 - 5 S.A./cc = 1.62 2 Part. Rad. = 1.89 - 4
pH = 8.3-8.5 MicroM Dia. Si = 1.8 Mol./Area(0-6) = 4.50-10 Mol./Area(2-6) = 3.58-10 Spec. S.A. = 4.50 - 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	2.00	7.00	9.00	8.00	8.00	8.00	1.00
2.02	4.04	2.11	1.11	2.83	3.64	4.44	1.00
1.06	2.12	5.85	1.06	1.49	1.91	2.34	2.87
4.62	3.85	1.51	1.37	1.28	1.24	1.21	1.24
4.62	2.01	1.12	1.24	1.10	1.10	1.10	1.37

pH = 7.6-7.9 MicroM Dia. Si = 3.9 Mol./Area(0-6) = 2.67-10 Mol./Area(2-6) = 2.19-10 Spec. S.A. = 7.70 - 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
2.00	2.00	6.00	1.00	8.00	9.00	9.00	9.00
1.18	2.36	5.90	1.18	1.65	2.18	2.71	3.25
1.06	2.12	5.32	1.06	1.49	1.97	2.44	2.92
2.70	2.25	8.03	8.05	7.51	7.44	7.40	7.38
2.70	1.17	5.63	8.05	6.44	7.24	7.24	7.24

pH = 8.3-8.5 MicroM Dia. Si = 55.0 Mol./Area(0-6) = -2.17-10 Mol./Area(2-6) = -1.18-10 Spec. S.A. = 5.70 - 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
2.00	2.00	6.00	1.00	8.00	9.00	9.00	9.00	9.00	9.00
1.59	3.19	1.10	1.67	2.15	2.47	2.55	2.63	2.79	2.79
1.06	2.12	5.32	1.11	1.43	1.65	1.70	1.75	1.86	1.86
3.65	3.04	1.63	1.14	9.78	8.43	6.96	5.98	4.75	3.80
3.65	4.76	1.39	6.52	6.52	4.35	1.08	1.08	1.08	0.00

pH = 8.3-8.5 MicroM Dia. Si = 105.4 Mol./Area(0-6) = -6.46-10 Mol./Area(2-6) = -3.04-10 Spec. S.A. = 6.90 - 1

LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
1.20	2.30	2.80	1.90	1.70	8.00	6.00	6.00	1.00	9.00
7.91	2.30	4.15	5.40	6.52	7.45	7.45	7.84	8.50	9.10
6.39	1.86	3.35	4.36	5.27	5.69	6.01	6.33	6.86	7.14
1.81	2.20	5.66	3.68	2.96	2.40	2.03	1.78	1.44	1.24
1.81	1.50	2.93	1.70	1.52	7.18	5.39	5.39	4.49	4.04

pH = 7.6-7.9 MicroM Dia. Si = 105.4 Mol./Area(0-6) = -1.70-10 Mol./Area(2-6) = -7.72-11 Spec. S.A. = 6.80 - 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
5.00	9.00	3.00	2.00	1.00	5.00	1.00	5.00
3.34	9.36	2.13	1.27	1.33	1.67	1.73	2.07
2.66	7.45	9.05	1.01	1.06	1.33	1.38	1.65
7.65	8.93	1.55	8.66	6.07	5.69	4.74	4.71
7.65	5.99	3.19	1.82	9.11	4.55	9.11	4.55

OBSIDIAN

Den. = 2.62 Form. Wt. = 262 # Si Atoms / Form. = 3 Spec. S. A. = .98 Total S. A. = 1.96 Mol. Vol. = 100.0
L Thickness = 5.50 - 8 Vol./L = 1.07 - 3 Mol./L = 1.07 - 5 Mol. Si/L = 3.23 - 5 S.A./cc = 2.61 2 Part. Rad. = 1.16 - 4
pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 2.34-10 Mol./Area(2-6) = 1.21-10 Spec. S.A. = 9.60 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
8.00	1.00	1.10	8.00	5.00	4.00	6.00	8.00
1.89 - 2	4.25 - 2	6.85 - 2	8.74 - 2	9.93 - 2	1.08 - 1	1.22 - 1	1.41 - 1
2.61 - 5	5.89 - 5	9.49 - 5	1.21 - 4	1.37 - 4	1.50 - 4	1.70 - 4	1.96 - 4
8.68-15	8.13-16	1.87-16	1.19-16	9.04-17	7.42-17	6.71-17	6.45-17
8.68-15	4.71-16	8.28-17	5.16-17	3.22-17	2.58-17	3.87-17	5.16-17

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.55-10 Mol./Area(2-6) = 8.37-11 Spec. S.A. = 9.40 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
3.00	6.00	9.00	5.00	4.00	4.00	4.00	4.00
7.24 - 3	2.17 - 2	4.34 - 2	5.55 - 2	6.52 - 2	7.48 - 2	8.45 - 2	9.41 - 2
9.82 - 6	2.94 - 5	5.89 - 5	7.53 - 5	8.84 - 5	1.01 - 4	1.14 - 4	1.27 - 4
3.32-15	4.15-16	1.18-16	7.58-17	5.93-17	5.11-17	4.61-17	4.28-17
3.32-15	2.89-16	6.92-17	3.29-17	2.63-17	2.63-17	2.63-17	2.63-17

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 5.52-11 Mol./Area(2-6) = 3.15-11 Spec. S.A. = 9.50 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
1.00	0.00	5.00	2.00	2.00	1.00	1.00	2.00	1.00
2.38 - 3	2.38 - 3	1.43 - 2	1.91 - 2	2.38 - 2	2.62 - 2	2.86 - 2	3.34 - 2	3.58 - 2
3.27 - 6	3.27 - 6	1.96 - 5	2.61 - 5	3.27 - 5	3.60 - 5	3.92 - 5	4.58 - 5	4.91 - 5
1.09-15	4.56-17	3.91-17	2.61-17	2.17-17	1.79-17	1.56-17	1.52-17	1.22-17
1.09-15	0.00	3.80-17	1.30-17	1.30-17	6.52-18	6.52-18	1.30-17	3.26-18

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = 3.09-11 Mol./Area(2-6) = 0.00 Spec. S.A. = 9.70 -1

DELTA CONC.
LAYERS LOST
Z VOL. LOST
AVG. FLUX
INS. FLUX

1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
1.00	1.00	6.00	2.00	-2.00	0.00	0.00	0.00
2.34 - 3	4.68 - 3	1.87 - 2	2.34 - 2	1.87 - 2	0.87 - 2	1.87 - 2	1.87 - 2
3.27 - 6	6.54 - 6	2.61 - 5	3.27 - 5	2.61 - 5	2.61 - 5	2.61 - 5	2.61 - 5
1.07-15	8.94-17	5.11-17	3.19-17	1.70-17	1.27-17	1.02-17	8.52-18
1.07-15	4.66-17	4.47-17	1.27-17	-1.27-17	0.00	0.00	0.00

OLIGOCLASE

Den. = 2.62 Form. Wt. = 262 # Si Atoms / Form. = 3 Spec. S. A. = .73 Total S. A. = 1.46 Mol. Vol. = 100.0
L Thickness = 5.50 - 8 Vol./L = 8.03 - 4 Mol./L = 8.03 - 6 Mol. Si/L = 2.41 - 5 S.A./cc = 1.94 2 Part. Rad. = 1.56 - 4

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 2.06-10 Mol./Area(2-6) = 1.68-10 Spec. S.A. = 4.90 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	0.00	1.00	4.00	4.00	4.00	3.00	5.00	6.00
LAYERS LOST	0.00	4.63 - 3	2.31 - 2	4.16 - 2	6.02 - 2	7.41 - 2	9.72 - 2	1.25 - 1
X VOL. LOST	0.00	3.27 - 6	1.63 - 5	2.94 - 5	4.25 - 5	5.24 - 5	6.87 - 5	8.84 - 5
AVG. FLUX	0.00	8.85-17	6.32-17	5.69-17	5.48-17	5.06-17	5.31-17	5.69-17
INS. FLUX	0.00	9.24-17	5.90-17	5.06-17	5.06-17	3.79-17	6.32-17	7.59-17

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 5.89-11 Mol./Area(2-6) = 4.82-11 Spec. S.A. = 7.00 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	0.00	0.00	2.00	1.00	2.00	2.00	2.00	2.00
LAYERS LOST	0.00	0.00	6.48 - 3	9.72 - 3	1.62 - 2	2.27 - 2	2.91 - 2	3.56 - 2
X VOL. LOST	0.00	0.00	6.54 - 6	9.82 - 6	1.63 - 5	2.29 - 5	2.94 - 5	3.60 - 5
AVG. FLUX	0.00	0.00	1.77-17	1.32-17	1.47-17	1.55-17	1.59-17	1.62-17
INS. FLUX	0.00	0.00	2.06-17	8.85-18	1.77-17	1.77-17	1.77-17	1.77-17

pH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = -2.07-10 Mol./Area(2-6) = -8.07-11 Spec. S.A. = 6.50 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-4.00	-7.00	-1.10 - 1	-5.00	-5.00	-3.00	-1.00	0.00	-2.00	-2.00
LAYERS LOST	-1.39 - 2	-3.84 - 2	-7.68 - 2	-9.42 - 2	-1.11 - 1	-1.22 - 1	-1.25 - 1	-1.25 - 1	-1.32 - 1	-1.39 - 1
X VOL. LOST	-1.30 - 5	-3.60 - 5	-7.20 - 5	-8.84 - 5	-1.04 - 4	-1.14 - 4	-1.17 - 4	-1.17 - 4	-1.24 - 4	-1.30 - 4
AVG. FLUX	-6.41-15	-7.34-16	-2.09-16	-1.28-16	-1.01-16	-8.34-17	-6.86-17	-5.72-17	-4.53-17	-3.81-17
INS. FLUX	-6.41-15	-4.87-16	-1.22-16	-4.76-17	-4.76-17	-2.86-17	-9.53-18	0.00	-9.53-18	-9.53-18

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -6.22-10 Mol./Area(2-6) = -2.73-10 Spec. S.A. = 8.50 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-2.20 - 1	-2.90 - 1	-2.80 - 1	-2.00 - 1	-1.50 - 1	-8.00	-9.00	-1.00	-1.30	-1.50
LAYERS LOST	-5.87 - 2	-1.36 - 1	-2.10 - 1	-2.64 - 1	-3.04 - 1	-3.25 - 1	-3.49 - 1	-3.76 - 1	-4.11 - 1	-4.51 - 1
X VOL. LOST	-7.20 - 5	-1.67 - 4	-2.58 - 4	-3.24 - 4	-3.73 - 4	-3.99 - 4	-4.29 - 4	-4.61 - 4	-5.04 - 4	-5.53 - 4
AVG. FLUX	-2.69-14	-2.60-15	-5.76-16	-3.61-16	-2.77-16	-2.22-16	-1.91-16	-1.71-16	-1.40-16	-1.23-16
INS. FLUX	-2.69-14	-1.54-15	-2.38-16	-1.45-16	-1.09-16	-5.83-17	-6.56-17	-7.29-17	-4.74-17	-5.47-17

pH = 7.6-7.9 MicroM Dis. Si = 101.7 Mol./Area(0-6) = -2.27-10 Mol./Area(2-6) = -9.22-11 Spec. S.A. = 6.10 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-6.00	-9.00	-7.00	-4.00	-2.00	-3.00	-3.00	-3.00
LAYERS LOST	-2.23 - 2	-5.58 - 2	-8.18 - 2	-9.67 - 2	-1.04 - 1	-1.15 - 1	-1.26 - 1	-1.37 - 1
X VOL. LOST	-1.96 - 5	-4.91 - 5	-7.20 - 5	-8.51 - 5	-9.16 - 5	-1.01 - 4	-1.11 - 4	-1.21 - 4
AVG. FLUX	-1.02-14	-1.06-15	-2.23-16	-1.32-16	-9.48-17	-7.87-17	-6.91-17	-6.26-17
INS. FLUX	-1.02-14	-6.68-16	-8.30-17	-4.06-17	-2.03-17	-3.04-17	-3.04-17	-3.04-17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

OLIVINE

Den. = 3.22 Form. Wt. = 140 # Si Atoms / Form. = 1 Spec. S. A. = .43 Total S. A. = .86 Mol. Vol. = 43.4
L Thickness = 4.17 - 8 Vol./L = 3.58 - 4 Mol./L = 8.25 - 6 Mol. Si/L = 8.25 - 6 S.A./cc = 1.14 2 Part. Rad. = 2.16 - 4

PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 3.82 - 9 Mol./Area(2-6) = 1.34 - 9 Spec. S.A. = 3.80 - 1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	3.40	1.30	8.80	4.10	2.70	2.00	2.20	2.60
X VOL. LOST	3.49	1.68	2.59	3.01	3.29	3.49	3.72	3.99
AVG. FLUX	1.78	4	1.32	3	1.67	3	1.90	3
INS. FLUX	9.32-14	1.87-14	4.11-15	2.39-15	1.74-15	1.38-15	1.18-15	1.05-15
	9.32-14	1.54-14	1.67-15	6.68-16	4.40-16	3.26-16	3.58-16	4.24-16

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.80 - 9 Mol./Area(2-6) = 4.19-10 Spec. S.A. = 1.10

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	5.00	2.22	1.35	4.80	2.80	2.10	1.60	1.00
X VOL. LOST	1.77	1	1.44	1.61	1.71	1.79	1.84	1.88
AVG. FLUX	2.62	4	1.42	3	2.13	3	2.64	3
INS. FLUX	4.73-14	1.07-14	2.29-15	1.28-15	9.07-16	7.10-16	5.86-16	4.97-16
	4.73-14	9.14-15	8.87-16	2.70-16	1.57-16	1.18-16	9.01-17	5.63-17

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 9.82-10 Mol./Area(2-6) = 3.09-10 Spec. S.A. = 1.60

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
LAYERS LOST	3.70	1.40	1.10	5.10	2.00	1.80	2.00	2.30	3.10	2.30
X VOL. LOST	9.03	4	7.01	8.25	8.74	9.18	9.67	1.02	1.09	1.15
AVG. FLUX	1.94	4	1.50	1.77	1.87	1.97	2.07	2.19	2.36	2.48
INS. FLUX	2.40-14	4.80-15	1.11-15	6.54-16	4.62-16	3.64-16	3.06-16	2.70-16	2.17-16	1.83-16
	2.40-14	3.96-15	4.97-16	1.97-16	7.75-17	6.97-17	7.75-17	8.91-17	6.00-17	4.45-17

DELTA CONC.	84 DYS	98 DYS	112 DYS
LAYERS LOST	1.20	1.40	1.30
X VOL. LOST	1.18	1.21	1.25
AVG. FLUX	2.54	3	2.68
INS. FLUX	1.56-16	1.38-16	1.24-16
	2.32-17	2.71-17	2.51-17

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 1.70 - 9 Mol./Area(2-6) = 2.43-10 Spec. S.A. = 1.03

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	5.00	2.23	1.29	3.00	1.70	1.00	6.00	4.00
X VOL. LOST	1.89	1	1.52	1.63	1.70	1.74	1.76	1.77
AVG. FLUX	2.62	4	2.11	2.26	3	2.40	2.44	2.46
INS. FLUX	5.05-14	1.15-14	2.41-15	1.30-15	9.00-16	6.90-16	5.59-16	4.70-16
	5.05-14	9.80-15	9.05-16	1.80-16	1.02-16	6.01-17	3.61-17	2.40-17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

OLIVINE (CONT.)

pH = 8.3-8.5 Microm Dis. S1 = 205.0 Mol./Area(0-6) = 4.90-10 Mol./Area(2-6) = 1.47-10 Spec. S.A. = 1.17									
1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	4.00	4.50	1	2.60	4.00	3.00	2.00	1.20	2.00
LAYERS LOST	1.33	1.63	1	4.44	4.94	5.04	5.11	5.51	5.57
Z VOL. LOST	2.09	2.57	4	6.98	7.76	7.92	8.03	8.66	8.76
AVG. FLUX	3.56-15	1.81-15	5.67-16	3.52-16	1.96-16	1.60-16	1.35-16	1.09-16	8.85-17
INS. FLUX	3.56-15	1.74-15	3.58-16	1.37-16	2.11-17	1.58-17	1.05-17	3.17-17	5.29-17

pH = 8.3-8.5 Microm Dis. S1 = 468.0 Mol./Area(0-6) = -6.76-10 Mol./Area(2-6) = -4.29-10 Spec. S.A. = 1.17									
1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-2.40	-2.30	1	-1.60	-2.50	-3.00	-3.80	-4.20	-4.20
LAYERS LOST	-8.01	-1.57	1	-3.10	-3.94	-4.77	-5.08	-5.45	-5.45
Z VOL. LOST	-1.26	-2.46	4	-4.88	-6.19	-7.50	-8.32	-8.85	-8.85
AVG. FLUX	-2.13-14	-1.74-15	-4.08-16	-2.46-16	-2.08-16	-1.89-16	-1.83-16	-1.67-16	-1.67-16
INS. FLUX	-2.13-14	-8.90-16	-1.85-16	-8.47-17	-1.32-16	-1.32-16	-1.58-16	-2.01-16	-1.11-16

pH = 7.8-8.0 Microm Dis. S1 = 781.0 Mol./Area(0-6) = -1.15-10 Mol./Area(2-6) = -3.52-11 Spec. S.A. = 1.17									
1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-6.00	-8.00	1	0.00	-1.00	-4.00	-5.00	-5.00	-5.00
LAYERS LOST	-2.00	-4.67	2	-8.35	-8.68	-9.01	-1.03	-1.20	-1.20
Z VOL. LOST	-3.14	-7.35	4	-1.31	-1.36	-1.41	-1.62	-1.88	-1.88
AVG. FLUX	-5.34-15	-5.19-16	-1.32-16	-6.62-17	-4.59-17	-3.57-17	-3.28-17	-3.17-17	-3.17-17
INS. FLUX	-5.34-15	-3.09-16	-6.80-17	0.00	-5.29-18	-5.29-18	-2.11-17	-2.64-17	-2.64-17

ORTHOCLASE

Den. = 2.56 Form. Wt. = 278 # Si Atoms / Form. = 3 Spec. S.A. = .90 Total S.A. = 1.80 Mol. Vol. = 108.5
L Thickness = 5.65 -8 Vol./L = 1.01 -3 Mol./L = 9.38 -6 Mol. Si/L = 2.81 -5 S.A./cc = 2.40 2 Part. Rad. = 1.30 -4
PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 1.95-12 Mol./Area(2-6) = 1.45-12 Spec. S.A. = 6.70 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
1.00	2.00	6.00	6.00	5.00	3.00	5.00	7.00
3.57 -5	1.07 -4	3.22 -4	5.36 -4	7.15 -4	8.23 -4	1.00 -3	1.25 -3
3.47 -6	1.04 -5	3.12 -5	5.21 -5	6.94 -5	7.99 -5	9.72 -5	1.21 -4
1.55-17	1.94-18	8.33-19	9.94-19	6.16-19	5.32-19	5.18-19	5.39-19
1.55-17	1.35-18	6.47-19	5.55-19	4.62-19	2.77-19	4.62-19	6.47-19

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 5.11-13 Mol./Area(2-6) = 4.26-13 Spec. S.A. = 8.80 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00
0.00	0.00	5.45 -5	1.09 -4	1.63 -4	2.19 -4	2.72 -4	3.27 -4
0.00	0.00	6.95 -6	1.38 -5	2.08 -5	2.77 -5	3.47 -5	4.17 -5
0.00	0.00	1.40-19	1.40-19	1.40-19	1.40-19	1.40-19	1.40-19
0.00	0.00	1.64-19	1.40-19	1.40-19	1.40-19	1.40-19	1.40-19

PH = 8.3-8.5 MicroM Dis. Si = 55.0 Mol./Area(0-6) = 4.74-13 Mol./Area(2-6) = 1.42-13 Spec. S.A. = 7.90 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
-2.00	-2.00	-3.00	-3.00	0.00	2.00	1.00	-3.00	0.00
-6.07 -5	-1.21 -4	-2.12 -4	-3.03 -4	-3.03 -4	-2.42 -4	-2.42 -4	-3.03 -4	-3.03 -4
-6.95 -6	-1.39 -5	-2.43 -5	-3.47 -5	-3.47 -5	-2.78 -5	-2.43 -5	-3.47 -5	-3.47 -5
-2.63-17	-2.19-18	-5.49-19	-3.92-19	-2.61-19	-1.56-19	-1.09-19	-1.30-19	-9.81-20
-2.63-17	-1.14-18	-2.74-19	-2.35-19	0.00	1.56-19	7.84-20	-2.35-19	0.00

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 2.43-12 Mol./Area(2-6) = 1.35-12 Spec. S.A. = 9.10 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
-4.00	-1.20 -1	-1.00 -1	-8.00	-1.10 -1	-5.00	-5.00	-4.00	0.00	-1.00
-1.05 -4	-4.21 -4	-6.85 -4	-8.96 -4	-1.18 -3	-1.31 -3	-1.44 -3	-1.55 -3	-1.55 -3	-1.58 -3
-1.38 -5	-5.56 -5	-9.03 -5	-1.18 -4	-1.56 -4	-1.73 -4	-1.91 -4	-2.05 -4	-2.05 -4	-2.08 -4
-4.57-17	-7.63-18	-1.77-18	-1.15-18	-1.02-18	-8.51-19	-7.49-19	-6.70-19	-5.03-19	-4.08-19
-4.57-17	-5.97-18	-7.94-19	-3.45-19	-7.49-19	-3.40-19	-3.40-19	-2.72-19	0.00	-3.40-20

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 1.20-12 Mol./Area(2-6) = 4.91-13 Spec. S.A. = 8.40 1

DELTA CONC.
LAYERS LOST
X VOL. LOST
AVG. FLUX
INS. FLUX

1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
-4.00	-7.00	-5.00	0.00	-3.00	-5.00	-1.00	-2.00
-1.14 -4	-3.14 -4	-4.56 -4	-4.56 -4	-5.42 -4	-6.85 -4	-7.13 -4	-7.70 -4
-1.38 -5	-3.82 -5	-5.56 -5	-5.56 -5	-6.60 -5	-8.34 -5	-8.68 -5	-9.38 -5
-4.96-17	-5.68-18	-1.18-18	-5.90-19	-4.67-19	-6.62-19	-3.69-19	-3.32-19
-4.96-17	-3.77-18	-4.30-19	0.00	-2.21-19	-3.69-19	-7.38-20	-1.47-19

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

QUARTZ

Den. = 2.65 Form. Wt. = 60 # Si Atoms / Form. = 1 Spec. S. A. = .86 Total S. A. = 1.72 Mol. Vol. = 22.6
L Thickness = 3.35 -8 Vol./L = 5.77 -4 Mol./L = 2.54 -5 S.A./cc = 2.29 2 Part. Rad. = 1.31 -4

PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 4.72 -9 Mol./Area(2-6) = 3.10 -9 Spec. S.A. = 7.00 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	2.60	1.17	1.59	1.40	1.59	1.02	1.10	1.19
X VOL. LOST	9.39	3.16	1.09	1.59	1.39	2.35	2.75	3.18
AVG. FLUX	5.84	3.21	6.79	9.94	1.23	1.46	1.71	1.98
INS. FLUX	3.86	8.86	2.67	1.95	1.62	1.44	1.35	1.30
		7.56	1.64	1.24	9.65	9.03	9.74	1.05

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 4.06 -9 Mol./Area(2-6) = 2.16 -9 Spec. S.A. = 6.90 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	2.50	1.13	2.11	1.33	1.30	7.00	6.30	5.50
X VOL. LOST	9.16	3.03	1.27	1.76	2.05	2.30	2.54	2.74
AVG. FLUX	5.62	3.10	7.85	1.08	1.25	1.41	1.55	1.68
INS. FLUX	3.77	8.68	3.13	2.16	1.67	1.41	1.24	1.12
		7.41	2.21	1.19	7.00	6.29	5.66	4.94

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 6.19 -9 Mol./Area(2-6) = 3.51 -9 Spec. S.A. = 6.10 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
LAYERS LOST	3.50	2.02	1.99	1.58	1.07	9.70	1.00	1.09	1.19	7.00
X VOL. LOST	1.45	9.82	1.80	2.46	2.90	3.30	3.72	4.17	4.66	4.96
AVG. FLUX	7.87	5.33	9.80	3.33	1.57	1.79	2.02	2.26	2.53	2.69
INS. FLUX	5.97	1.68	4.43	3.01	2.37	2.02	1.82	1.70	1.43	1.21
		1.49	2.35	1.60	1.08	9.85	1.01	1.10	6.04	3.55

DELTA CONC.	84 DYS	98 DYS	112 DYS
LAYERS LOST	4.20	3.80	2.40
X VOL. LOST	5.13	5.29	5.39
AVG. FLUX	1.08	2.87	2.92
INS. FLUX	2.13	9.26	6.25
		1.93	1.21

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 3.10 -9 Mol./Area(2-6) = 1.49 -9 Spec. S.A. = 7.70 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	4.00	1.24	1.67	8.60	8.70	4.40	4.60	4.40
X VOL. LOST	1.31	5.38	1.08	1.37	1.65	1.80	1.95	2.09
AVG. FLUX	8.99	3.68	7.64	9.38	1.13	1.23	1.33	1.43
INS. FLUX	5.41	9.24	2.66	1.67	1.35	1.10	9.56	8.56
		7.29	1.36	6.92	7.00	3.54	3.70	3.54

QUARTZ (CONT.)

PH = 8.3-8.5 Microm Dis. Si = 205.0 Mol./Area(0-6) = 5.29 -9 Mol./Area(2-6) = 3.34 -9 Spec. S.A. = 7.50 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	2.50	1.20	2.45	2.00	1.33	1.01	1.10	1.25	1.09	9.00
LAYERS LOST	8.43	4.89	1.31	1.99	2.43	2.77	3.15	3.57	3.93	4.24
X VOL. LOST	5.62	3.26	8.77	1.32	1.62	1.85	2.10	2.38	2.62	2.83
AVG. FLUX	3.47	8.39	3.22	2.43	1.99	1.70	1.54	1.45	1.20	1.04
INS. FLUX	3.47	7.24	2.36	1.63	1.09	8.34	9.09	1.03	4.50	3.72

PH = 8.3-8.5 Microm Dis. Si = 468.0 Mol./Area(0-6) = 4.62 -9 Mol./Area(2-6) = 3.34 -9 Spec. S.A. = 7.50 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
DELTA CONC.	1.50	4.00	1.99	1.74	1.44	1.10	1.15	1.27	7.80
LAYERS LOST	5.05	1.85	8.56	1.44	1.92	2.30	2.68	3.11	3.37
X VOL. LOST	3.37	1.23	5.71	9.62	1.28	1.53	1.79	2.07	2.25
AVG. FLUX	2.08	3.18	2.09	1.76	1.57	1.40	1.31	1.27	1.03
INS. FLUX	2.08	2.41	1.91	1.43	1.19	9.09	9.50	1.04	3.22

PH = 7.8-8.0 Microm Dis. Si = 781.0 Mol./Area(0-6) = -3.99 -11 Mol./Area(2-6) = 1.65 -10 Spec. S.A. = 7.50 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-1.00	-1.40	-1.70	1.00	1.00	2.40	1.30	-6.00
LAYERS LOST	-3.37	-8.09	-1.38	-1.34	-1.31	-5.05	-6.74	-2.69
X VOL. LOST	-2.24	-5.39	-9.22	-8.99	-8.77	-3.37	-4.49	-1.79
AVG. FLUX	-1.38	-1.38	-3.38	-1.65	-1.07	-3.10	-3.30	-1.10
INS. FLUX	-1.38	-8.45	-1.63	8.26	8.26	1.98	1.07	-4.96

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDC

QUARTZ (LHF)

Den. = 2.65 Form. Wt. = 60 # Si Atoms / Form. = 1 Spec. S. A. = .29 Total S. A. = .58 Mol. Vol. = 22.6
L Thickness = 3.35 - 8 Vol./L = 1.94 #4 Mol./L = 8.59 - 6 Mol. Si/L = 8.59 - 6 S.A./cc = 7.73 1 Part. Rad. = 3.90 - 4
pH = 7.6-7.6 Microm Dis. Si = 3.0 Mol./Area(0-6) = 5.56-10 Mol./Area(2-6) = 4.26-10 Spec. S.A. = 2.90 - 1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	4.00	4.00	7.00	6.00	7.00	6.00	7.00
LAYERS LOST	1.74 - 2	5.23 - 2	8.72 - 2	1.48 - 1	2.00 - 1	2.61 - 1	3.14 - 1	3.75 - 1
X VOL. LOST	4.49 - 6	1.34 - 5	2.24 - 5	3.82 - 5	5.17 - 5	6.74 - 5	8.09 - 5	9.67 - 5
AVG. FLUX	7.18-15	8.97-16	2.13-16	1.81-16	1.63-16	1.60-16	1.53-16	1.53-16
INS. FLUX	7.18-15	6.24-16	9.97-17	1.49-16	1.28-16	1.49-16	1.28-16	1.49-16

pH = 7.7-7.9 Microm Dis. Si = 109.8 Mol./Area(0-6) = -5.08-10 Mol./Area(2-6) = -3.02-10 Spec. S.A. = 3.10 - 1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-4.00	-6.00	-7.00	-7.00	-5.00	-5.00	-4.00	-4.00
LAYERS LOST	-3.26 - 2	-8.16 - 2	-1.38 - 1	-1.95 - 1	-2.36 - 1	-2.77 - 1	-3.10 - 1	-3.42 - 1
X VOL. LOST	-8.39 - 6	-2.24 - 5	-3.82 - 5	-5.39 - 5	-6.52 - 5	-7.64 - 5	-8.54 - 5	-9.44 - 5
AVG. FLUX	-1.34-14	-1.40-15	-1.40-16	-2.40-16	-1.93-16	-1.70-16	-1.52-16	-1.40-16
INS. FLUX	-1.34-14	-8.76-16	-1.63-16	-1.40-16	-1.00-16	-1.00-16	-8.00-17	-8.00-17

THIS PAGE IS BEST QUALITY PRACTICABLE
FROM COPY FURNISHED TO DDG

QUANTZ (1 HF TREATED)

Den. = 2.65 Form. Wt. = 60 # Si Atoms / Form. = 1 Spec. S. A. = .86 Total S. A. = 1.72 Mol. Vol. = 22.6
L Thickness = 3.35 -8 Vol./L = 5.77 -4 Mol./L = 2.54 -5 Mol. Si/L = 2.54 -5 S.A./cc = 2.29 2 Part. Rad. = 1.31 -4
pH = 7.6-7.8 MicroM Dis. Si = 3.0 Mol./Area(0-6) = 5.49-10 Mol./Area(2-6) = 4.12-10 Spec. S.A. = 3.00 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	3.00	4.00	4.00	7.00	6.00	7.00	6.00	7.00
LAYERS LOST	2.52 -2	5.90 -2	9.27 -2	1.51 -1	2.02 -1	2.61 -1	3.12 -1	3.71 -1
X VOL. LOST	6.74 -6	1.57 -5	2.47 -5	4.04 -5	5.39 -5	6.97 -5	8.32 -5	9.89 -5
AVG. FLUX	1.04-14	1.01-15	2.27-16	1.86-16	1.65-16	1.60-16	1.52-16	1.51-16
INS. FLUX	1.04-14	6.03-16	9.64-17	1.44-16	1.24-16	1.44-16	1.24-16	1.44-16

pH = 7.7-7.9 MicroM Dis. Si = 109.8 Mol./Area(0-6) = -5.25-10 Mol./Area(2-6) = -3.12-10 Spec. S.A. = 3.00 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-4.00	-6.00	-7.00	-7.00	-5.00	-5.00	-4.00	-4.00
LAYERS LOST	-3.37 -2	-8.43 -2	-1.43 -1	-2.02 -1	-2.44 -1	-2.86 -1	-3.20 -1	-3.54 -1
X VOL. LOST	-8.99 -6	-2.24 -5	-3.82 -5	-5.39 -5	-6.52 -5	-7.64 -5	-8.54 -5	-9.44 -5
AVG. FLUX	-1.38-14	-1.44-15	-3.31-16	-2.48-16	-1.99-16	-1.75-16	-1.57-16	-1.44-16
INS. FLUX	-1.38-14	-9.05-16	-1.68-16	-1.44-16	-1.03-16	-1.03-16	-8.26-17	-8.26-17

QUARTZ (2HF)

Den. = 2.65 Form. Wt. = 60 # Si Atoms / Form. = 1 Spec. S. A. = .29 Total S. A. = .58 Mol. Vol. = 22.6
L Thickness = 3.35 - 8 Vol./L = 1.94 - 4 Mol./L = 8.59 - 6 Mol. Si/L = 8.59 - 6 S.A./cc = 7.73 1 Part. Rad. = 3.90 - 4
pH = 7.6-7.8 MicroM Dis. Si = 3.1 Mol./Area(0-6) = 7.77-10 Mol./Area(2-6) = 4.44-10 Spec. S.A. = 2.70 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	6.00	6.00	1.20	9.00	7.00	7.00	5.00	4.00
LAYERS LOST	5.62 - 2	1.12 - 1	2.24 - 1	3.09 - 1	3.74 - 1	4.40 - 1	4.87 - 1	5.24 - 1
Z VOL. LOST	1.34 - 5	2.69 - 5	5.39 - 5	7.42 - 5	8.99 - 5	1.05 - 4	1.16 - 4	1.25 - 4
AVG. FLUX	2.31-14	1.92-15	5.51-16	3.78-16	3.06-16	2.69-16	2.38-16	2.14-16
INS. FLUX	2.31-14	1.00-15	3.21-16	2.06-16	1.60-16	1.60-16	1.14-16	9.18-17

pH = 7.7-7.7 MicroM Dis. Si = 53.5 Mol./Area(0-6) = 1.29-10 Mol./Area(2-6) = 1.29-10 Spec. S.A. = 2.90 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	0.00	0.00	0.00	3.00	2.00	3.00	1.00	1.00
LAYERS LOST	0.00	0.00	0.00	2.61 - 2	4.16 - 2	6.97 - 2	7.85 - 2	8.72 - 2
Z VOL. LOST	0.00	0.00	0.00	6.74 - 6	1.12 - 5	1.79 - 5	2.02 - 5	2.24 - 5
AVG. FLUX	0.00	0.00	0.00	3.20-17	3.56-17	4.27-17	3.84-17	3.56-17
INS. FLUX	0.00	0.00	0.00	6.41-17	4.27-17	6.41-17	2.13-17	2.13-17

pH = 7.7-7.9 MicroM Dis. Si = 109.8 Mol./Area(0-6) = 6.83-10 Mol./Area(2-6) = 3.34-10 Spec. S.A. = 2.80 -1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-7.00	-7.00	-1.20	-6.00	-5.00	-5.00	-6.00	-3.00
LAYERS LOST	-6.32 - 2	-1.26 - 1	-2.34 - 1	-2.89 - 1	-3.34 - 1	-3.79 - 1	-4.33 - 1	-4.60 - 1
Z VOL. LOST	-1.57 - 5	-3.14 - 5	-5.84 - 5	-7.19 - 5	-8.32 - 5	-9.44 - 5	-1.07 - 4	-1.14 - 4
AVG. FLUX	-2.60-14	-2.17-15	-5.75-16	-3.54-16	-2.73-16	-2.32-16	-2.12-16	-1.88-16
INS. FLUX	-2.60-14	-1.13-15	-3.10-16	-1.32-16	-1.10-16	-1.10-16	-1.32-16	-6.64-17

QUARTZ (2MF TREATED)

Den. = 2.65 Form. Wt. = 60 # Si Atoms / Form. = 1 Spec. S. A. = .86 Total S. A. = 1.72 Mol. Vol. = 22.6
L Thickness = 3.35 - 8 Vol./L = 5.77 - 4 Mol./L = 2.54 - 5 Mol. Si/L = 2.54 - 5 S.A./cc = 2.29 2 Part. Rad. = 1.31 - 4
pH = 7.6-7.8 MicroM Dis. Si = 3.1 Mol./Area(0-6) = 7.77-10 Mol./Area(2-6) = 4.44-10 Spec. S.A. = 2.70 - 1

	1 HR.	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	6.00	6.00	1.20	1				
LAYERS LOST	5.62	1.12	2.24	-1	7.00	7.00	5.00	4.00
% VOL. LOST	1.34	2.69	5.39	-5	3.74	4.40	4.87	5.24
ANG. FLUX	2.31	1.92	3.51	-16	8.99	1.05	1.16	1.25
ANG. FLUX	2.31	1.92	3.51	-16	3.06	2.69	2.38	2.15
ANG. FLUX	2.31	1.92	3.51	-16	1.60	1.60	1.41	1.17

pH = 7.7-7.7 MicroM Dis. S1 = 53.5 Mol./Area(0-6) = 1.38-10 Mol./Area(2-6) = 1.38-10 Spec. S.A. = 2.70 -1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	0.00	0.00	0.00	3.00	2.00	3.00	1.00	1.00
LAYERS LOST	0.00	0.00	0.00	2.81	4.68	7.49	8.43	9.36
X VOL. LOST	0.00	0.00	0.00	6.74	1.12	1.79	2.02	2.24
AVG. FLUX	0.00	0.00	0.00	3.44	3.82	4.59	4.13	3.82
ANS. FLUX	0.00	0.00	0.00	6.88	4.59	6.88	2.29	2.29

pH = 7.7-7.9 Microm Dis. SI = 109.8 Mol./Area(0-6) = -6.80-10 Mol./Area(2-6) = -3.47-10 Spec. S.A. = 2.70 -1

[illegible]

RETICULATE

Den. = 3.90 Form. Wt. = 116 # Si Atoms / Form. = 1 Spec. S. A. = .63 Total S. A. = 1.26 Mol. Vol. = 29.7
L Thickness = 3.67 -8 Vol./L = 4.63 -4 Mol./L = 1.55 -5 Mol. Si/L = 1.55 -5 S.A./cc = 1.68 2 Part. Rad. = 1.22 -4

PH = 7.6-7.9 Microm Dis. Si = 3.9 Mol./Area(0-6) = 2.97-10 Mol./Area(2-6) = 1.90-10 Spec. S.A. = 6.30 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	3.00	5.00	1.00	1.00	1.00	4.00	6.00	5.00
X VOL. LOST	1.44 -2	3.85 -2	8.66 -2	1.34 -1	1.68 -1	1.87 -1	2.16 -1	2.40 -1
AVG. FLUX	1.30 -5	3.47 -5	7.82 -5	1.21 -4	1.52 -4	1.69 -4	1.95 -4	2.17 -4
INS. FLUX	4.96-15	5.51-16	1.77-16	1.37-16	1.14-16	9.59-17	8.85-17	8.20-17
		3.59-16	1.14-16	9.84-17	6.88-17	3.93-17	5.90-17	4.92-17

PH = 8.3-8.5 Microm Dis. Si = 105.4 Mol./Area(0-6) = 1.78-11 Mol./Area(2-6) = 4.76-11 Spec. S.A. = 6.30 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS
LAYERS LOST	2.00	-4.00	-3.00	3.00	2.00	0.00	0.00	3.00	1.00
X VOL. LOST	9.63 -3	-9.63 -3	-2.40 -2	-9.63 -3	0.00	0.00	0.00	1.44 -2	1.92 -2
AVG. FLUX	8.69 -6	-8.69 -6	-2.17 -5	-8.69 -6	0.00	0.00	0.00	1.30 -5	1.73 -5
INS. FLUX	3.30-15	-1.37-16	-4.92-17	-9.84-18	0.00	0.00	0.00	4.92-18	4.92-18
		-2.87-16	-3.44-17	2.95-17	1.96-17	0.00	0.00	2.95-17	4.92-18

PH = 7.6-7.9 Microm Dis. Si = 101.7 Mol./Area(0-6) = 1.19-11 Mol./Area(2-6) = -1.19-11 Spec. S.A. = 6.30 -1

DELTA CONC.	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
LAYERS LOST	-2.00	4.00	2.00	-2.00	0.00	0.00	0.00	0.00
X VOL. LOST	-9.63 -3	9.63 -3	1.92 -2	9.63 -3	9.63 -3	9.63 -3	9.63 -3	9.63 -3
AVG. FLUX	-8.69 -6	8.69 -6	1.73 -5	8.69 -6	8.69 -6	8.69 -6	8.69 -6	8.69 -6
INS. FLUX	-3.30-15	1.37-16	3.93-17	9.84-18	6.56-18	4.92-18	3.93-18	3.28-18
		2.87-16	2.29-17	-1.96-17	0.00	0.00	0.00	0.00

SERPENTINE

Den. = 2.50 Form. Wt. = 552 # Si Atoms / Form. = 4 Spec. S. A. = .70 Total S. A. = 1.40 Mol. Vol. = 220.8
L Thickness = 7.16 - 8 Vol./L = 1.00 - 3 Mol./L = 4.54 - 6 Mol. Si/L = 1.81 - 5 S.A./cc = 1.86 2 Part. Rad. = 1.71 - 4

pH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 5.90-10 Mol./Area(2-6) = 4.21-10 Spec. S.A. = 7.30 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	1.00	2.10	1.80	1.50	1.50	1.60	1.80
LAYERS LOST	7.90	4.74	1.30	1.01	2.61	3.20	3.83	4.54
X VOL. LOST	1.03	6.21	1.70	2.63	3.41	4.19	5.01	5.95
AVG. FLUX	2.85-15	7.13-16	2.80-16	2.16-16	1.86-16	1.71-16	1.64-16	1.62-16
INS. FLUX	2.85-15	6.20-16	2.08-16	1.52-16	1.27-16	1.27-16	1.35-16	1.52-16

pH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 3.67-10 Mol./Area(2-6) = 2.01-10 Spec. S.A. = 9.70 - 1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	1.00	1.80	1.50	1.40	1.20	1.00	8.00	8.00
LAYERS LOST	2.97	8.33	1.27	1.69	2.05	2.35	2.58	2.82
X VOL. LOST	5.17	1.44	2.22	2.94	3.57	4.08	4.50	4.91
AVG. FLUX	1.07-14	1.25-15	2.74-16	1.82-16	1.47-16	1.26-16	1.11-16	1.01-16
INS. FLUX	1.07-14	8.40-16	1.11-16	8.94-17	7.67-17	6.39-17	5.11-17	5.11-17

pH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = -1.24-11 Mol./Area(2-6) = -4.16-12 Spec. S.A. = 9.00 - 1

	1 HR	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS	56 DYS	70 DYS
DELTA CONC.	-4.00	-1.00	3.00	-1.00	2.00	-6.00	0.00	2.00	4.00	4.00
LAYERS LOST	-1.28	-1.60	-6.41	-9.62	-3.20	-1.60	-1.60	-9.62	-3.20	-3.20
X VOL. LOST	-2.06	-2.58	-1.03	-1.53	-5.17	-2.58	-2.58	-1.53	-5.17	-5.17
AVG. FLUX	-4.62-15	-2.41-16	-1.37-17	-1.03-17	-2.29-18	-8.61-18	-6.88-18	-3.44-18	8.61-19	3.44-18
INS. FLUX	-4.62-15	-5.03-17	2.41-17	-6.88-18	1.37-17	-2.75-17	0.00	1.37-17	1.37-17	1.37-17

pH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 3.86-11 Mol./Area(2-6) = 7.73-12 Spec. S.A. = 9.70 - 1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	2.00	2.00	4.00	2.00	0.00	0.00	1.00	-1.00
LAYERS LOST	5.95	1.19	2.38	2.97	2.97	2.97	3.27	2.97
X VOL. LOST	1.03	2.06	4.13	5.17	5.17	5.17	5.69	5.17
AVG. FLUX	2.14-15	1.78-16	5.11-17	3.19-17	2.13-17	1.59-17	1.40-17	1.06-17
INS. FLUX	2.14-15	9.33-17	2.98-17	1.27-17	0.00	0.00	6.39-18	-6.39-18

pH = 7.8-8.1 MicroM Dis. Si = 205.0 Mol./Area(0-6) = -1.14-10 Mol./Area(2-6) = 3.55-11 Spec. S.A. = 9.50 - 1

	1 HR*	1 DYS	7 DYS	14 DYS	21 DYS	28 DYS	35 DYS	42 DYS
DELTA CONC.	-3.00	-7.00	-2.60	1.00	5.00	7.00	-1.00	-3.00
LAYERS LOST	-1.51	-3.64	-1.15	-1.12	-9.72	-7.59	-7.90	-8.81
X VOL. LOST	-2.58	-6.21	-1.96	-1.91	-1.65	-1.29	-1.34	-1.50
AVG. FLUX	-5.48-15	-5.48-16	-2.48-16	-1.20-16	-6.96-17	-4.07-17	-3.39-17	-3.15-17
INS. FLUX	-5.48-15	-3.33-16	-1.97-16	6.52-18	3.26-17	4.56-17	-6.52-18	-1.95-17

TREMOLITE

Den. = 2.98 Form. Wt. = 810 # Si Atoms / Form. = 8 Spec. S. A. = .73 Total S. A. = 1.46 Mol. Vol. = 271.8
 L Thickness = 7.68 - 8 Vol./L = 1.12 - 3 Mol./L = 4.12 - 6 Mol. Si/L = 3.30 - 5 S.A./cc = 1.94 2 Part. Rad. = 1.37 - 4
 PH = 8.3-8.5 MicroM Dis. Si = 1.8 Mol./Area(0-6) = 1.14 - 9 Mol./Area(2-6) = 9.24-10 Spec. S.A. = 8.40 - 1

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS
 6.00 3.40 1 1.04 1 7.00 1 4.30 1 2.80 1 3.00 1 3.60 1
 LAYERS LOST 1.18 - 2 7.89 - 2 9.94 - 2 4.37 - 1 3.77 - 1 4.37 - 1 5.08 - 1
 X VOL. LOST 2.27 - 5 1.51 - 4 1.91 - 4 4.57 - 4 6.20 - 4 7.26 - 4 8.40 - 4 9.77 - 4
 AVG. FLUX 7.44-15 2.06-15 3.72-16 4.44-16 4.02-16 3.53-16 3.26-16 3.16-16
 INS. FLUX 7.44-15 1.83-15 8.93-17 5.16-16 3.17-16 2.06-16 2.21-16 2.65-16

PH = 7.6-7.9 MicroM Dis. Si = 3.9 Mol./Area(0-6) = 1.43 - 9 Mol./Area(2-6) = 6.40-10 Spec. S.A. = 1.10

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS
 3.00 1* 4.50 1 1.58 2 7.40 1 4.10 1 2.90 1 1.90 1 2.50 1
 LAYERS LOST 4.52 - 2 1.13 - 1 3.51 - 1 4.62 - 1 5.24 - 1 5.68 - 1 5.96 - 1 6.34 - 1
 X VOL. LOST 1.13 - 4 2.84 - 4 8.84 - 4 1.16 - 3 1.32 - 3 1.43 - 3 1.50 - 3 1.59 - 3
 AVG. FLUX 2.84-14 1.83-15 1.03-15 4.17-16 6.53-16 5.31-16 4.46-16 3.95-16
 INS. FLUX 2.84-14 1.83-15 1.03-15 4.17-16 6.53-16 5.31-16 4.46-16 3.95-16

PH = 8.3-8.5 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 1.36 - 9 Mol./Area(2-6) = 4.89-10 Spec. S.A. = 7.50 - 1

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS 56 DYS 70 DYS
 2.00 1* 7.50 1 9.80 1 5.20 1 1.70 1 7.00 1 1.00 1 1.20 1 1.40 1 1.40 1
 LAYERS LOST 4.42 - 3 1.70 - 1 3.86 - 1 5.01 - 1 5.39 - 1 5.54 - 1 5.77 - 1 6.03 - 1 6.34 - 1
 X VOL. LOST 7.59 - 6 2.92 - 4 6.64 - 4 8.61 - 4 9.26 - 4 9.33 - 4 9.90 - 4 1.03 - 3 1.42 - 3
 AVG. FLUX 2.77-15 4.43-15 1.44-15 9.38-16 6.72-16 5.18-16 4.31-16 3.76-16 2.96-16 2.82-16
 INS. FLUX 2.77-15 4.53-15 9.45-16 4.29-16 1.40-16 5.78-17 8.26-17 9.92-17 5.78-17 2.48-17

PH = 7.6-7.9 MicroM Dis. Si = 105.4 Mol./Area(0-6) = 1.21 - 9 Mol./Area(2-6) = 4.84-10 Spec. S.A. = 1.16

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS
 2.00 1* 4.00 1 1.65 2 6.80 1 4.20 1 2.30 1 9.00 1 8.00 1
 LAYERS LOST 8.57 - 2 3.21 - 1 4.18 - 1 4.78 - 1 5.11 - 1 5.24 - 1 5.36 - 1
 X VOL. LOST 7.59 - 5 2.27 - 4 8.54 - 4 1.11 - 3 1.27 - 3 1.35 - 3 1.39 - 3 1.42 - 3
 AVG. FLUX 1.79-14 2.24-15 1.20-15 7.83-16 5.96-16 4.78-16 3.92-16 3.34-16
 INS. FLUX 1.79-14 1.56-15 1.02-15 3.63-16 2.24-16 1.22-16 4.81-17 4.27-17

PH = 7.9-8.0 MicroM Dis. Si = 364.0 Mol./Area(0-6) = 2.16-10 Mol./Area(2-6) = 2.82-10 Spec. S.A. = 1.25

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS
 -1.00 1* -1.70 1 5.00 1 2.40 1 2.10 1 1.10 1 2.00 1
 LAYERS LOST -1.22 - 2 -3.58 - 2 -2.91 - 2 2.65 - 2 5.43 - 2 6.89 - 2 9.55 - 2
 X VOL. LOST -3.79 - 5 -1.02 - 4 -8.35 - 5 7.59 - 5 1.55 - 4 1.97 - 4 2.73 - 4
 AVG. FLUX -8.33-15 -9.37-16 -1.09-16 3.30-17 5.08-17 5.15-17 5.95-17
 INS. FLUX -8.33-15 -6.15-16 2.89-17 8.92-17 1.19-16 1.04-16 5.45-17 9.92-17

PH = 7.8-8.0 MicroM Dis. Si = 785.0 Mol./Area(0-6) = -1.08-10 Mol./Area(2-6) = -4.50-11 Spec. S.A. = 1.25

DELTA CONC. 1 HR 1 DYS 7 DYS 14 DYS 21 DYS 28 DYS 35 DYS 42 DYS
 -6.00 * -6.00 1 -9.00 1 -1.20 1 1.00 1 1.00 1 1.00 1
 LAYERS LOST -7.95 - 3 -1.59 - 2 -2.78 - 2 -2.64 - 2 -4.51 - 2 -4.64 - 2 -4.77 - 2
 X VOL. LOST -2.27 - 5 -4.55 - 5 -7.97 - 5 -8.73 - 5 -1.32 - 4 -1.29 - 4 -1.36 - 4
 AVG. FLUX -5.00-15 -4.16-16 -1.04-16 -5.70-17 -4.21-17 -3.47-17 -2.97-17
 INS. FLUX -5.00-15 -2.17-16 -5.20-17 -9.92-18 -5.95-17 4.96-18 -4.96-18

THIS PAGE IS BEST QUALITY PRACTICABLE
 FROM COPY FURNISHED TO DDC

ELEMENTAL ANALYSES

Chemical Composition
(wt. % oxides)

	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	DH&Z*
Albite	73.35	18.64	0.0	0.46	0.11	12.04	0.0	0.22	(324, #1)
Anorthite	43.54	35.66	0.58	0.06	19.53	0.26	tr.	N.D.	(325, #7,8)
Apua Pt. Laua	51.03	13.45	12.92	11.92	10.42	2.95	0.35	2.24	
Bentonite (N.E.W.)	66.33	23.21	4.60	2.69	1.33	3.40	0.24	0.29	
Bentonite (CRC)	66.86	24.16	1.91	4.75	3.17	1.27	0.17	0.79	
Chlorite	30.57	22.83	18.59	29.61	0.33	1.00	0.0	2.24	(234-5, #2,5)
Diopside	51.76	3.11	1.24	14.18	31.53	1.32	P ₂ O ₅ (5.81)	0.20	(105-6, #4,6)
Hornblende	44.62	10.48	17.74	11.66	10.68	4.46	1.39	0.99	(152, #7,10)
Hyaloclastite	51.28	13.44	12.83	12.03	10.53	3.21	0.38	2.23	
Hypersthene	54.83	4.72	16.28	26.03	2.21	1.04	0.0	0.44	(106, #10)
Illite	66.95	20.99	5.60	2.14	0.70	1.53	5.05	1.30	(251, #3)
Kaolinite	51.97	46.41	0.0	0.33	0.0	0.82	0.0	1.80	(251, #1,2)
Kyanite	61.73(?)	37.03(?)	0.0	0.43	0.01	0.89	0.0	0.50	
Montmorillonite	68.79	21.37	1.59	6.36	3.63	0.96	0.05	0.48	(252, #5)
Montmorillonite (clean)	66.84	19.74	2.48	6.88	0.10	7.92	0.36	0.56	

Acetone	40.00	14.16	5.70	9.20	10.10	1.33	0.30	0.20	
Acetone (cont)	42.18	11.11	0.20	0.20	1.00	0.40	0.02	0.00	(521' 123)
Acetone	41.20 (1)	13.00 (1)	0.0	0.0	0.01	0.00	0.0	0.20	
Acetone	41.00	00.00	0.0	0.0	0.0	0.00	0.0	1.00	(101' 41' 1)
Allyl	00.00	30.00	0.00	1.10	0.10	1.20	2.00	1.20	(501' 43)
Allylacetone	00.00	0.15	10.00	00.00	0.11	1.00	0.0	0.00	(100' 810)
Allylacetone	01.30	10.00	11.00	15.00	10.20	0.00	0.10	0.00	
Allylacetone	00.00	10.00	11.00	10.00	10.00	0.00	1.20	0.00	(120' 41' 10)
Diobutene	20.30	0.10	1.00	10.10	11.20	1.10	(0.01)	0.30	(102' 0)
CPyocine	20.20	00.00	10.00	00.00	0.20	1.00	0.0	0.00	(102)
Benzoic acid	00.00	00.10	1.00	0.10	0.10	1.10	0.10	0.10	
Benzoic acid (K.E.M.)	00.30	00.00	0.00	0.00	0.00	0.00	0.00	0.00	
Vanillin	20.00	10.00	10.00	10.00	10.00	0.00	0.00	0.00	
Vanillin	00.00	00.00	0.00	0.00	10.00	0.00	0.00	0.00	(100' 10' 0)
Vanillin	10.00	10.00	0.00	0.00	0.10	10.00	0.00	0.00	(100' 10)

(see X column)
 Specific Carbonation

Chemical Composition (cont.)
(wt. % oxides)

	SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Na ₂ O	K ₂ O	TiO ₂	DH&Z*
Nepheline	43.92	32.83	0.0	0.49	0.41	18.70	6.20	0.18	(361, #1,2)
Obsidian	78.27	15.41	1.09	0.56	1.05	4.79	5.22	0.48	
Oligoclase	32.90	52.26	0.0	0.49	0.0	0.82	0.0	0.17	
Olivine	40.12	2.67	16.16	42.74	0.32	0.90	0.0	0.19	(4, #2)
Orthoclase	65.08	23.04	0.0	0.43	3.67	8.77	3.81	0.18	(304, #11)
Quartz	~100	2.86(?)	0.0	0.43	0.0	0.78	0.0	0.18	
Reticulite	51.70	14.27	12.70	10.44	11.04	3.22	0.46	2.37	
Serpentine	43.07	15.07	3.94	5.47	38.41	1.08	0.0	0.93	
Tremolite	62.00	3.80	4.78	20.97	10.85	1.31	0.0	0.22	

*Analyses courtesy of the Soil Science Department, University of Hawaii, using their X-ray Quantometer Analytical Facility. The numbers in the last column give the page and sample number (W. A. Deer, R. A. Howie and J. Zussman, An Introduction to the Rock Forming Minerals, John Wiley & Sons, New York, N. Y., 528 pp., 1971) of elemental analyses of minerals whose composition was most similar to our samples.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER HIG Rept. 79-1; Data Rept. 35	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Raw Data and First Order Calculations for the Study "Silica 'Apparent' Solubilities and Rates of Dissolution and Precipitation for ca. 25 Common Minerals at 1-2°C, pH 7.5-8.5 in Seawater"		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) David C. Hurd, Charles Fraley, and James K. Fugate		6. PERFORMING ORG. REPORT NUMBER HIG Rept. 79-1; Data Rept. 35
9. PERFORMING ORGANIZATION NAME AND ADDRESS Hawaii Institute of Geophysics 2525 Correa Rd. Honolulu, HI. 96822		8. CONTRACT OR GRANT NUMBER(s) ONR N00014-75-C-0209 Marine Chemistry Subtask 3A
11. CONTROLLING OFFICE NAME AND ADDRESS Office of Naval Research Ocean Science & Technology Division Bay St. Louis, MS. 39520		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Office of Naval Research Branch Office 1030 East Green Street Pasadena, CA. 91160		12. REPORT DATE January 1979
		13. NUMBER OF PAGES 48 pages
		15. SECURITY CLASS. (of this report)
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Published in Hawaii Institute of Geophysics Report Series, HIG-79-1; Data Report 35. 48 pages. January 1979.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) chem. oceanog. dissolution rates silica alumino-silicates surface area silicates weathering sequence		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) INTRODUCTION - The data report gives the raw data and preliminary flux calculations for the experiments referred to in the paper "Silica 'Apparent' Solubilities and Rates of Dissolution and Precipitation for ca. 25 Common Minerals at 1-2°C, pH 7.5-8.5 in Seawater", by David C. Hurd, Charles Fraley, and James K. Fugate, to be published in the volume "Proceedings from Symposium on Chemical Modeling--Speciation Sorption, Solubility, and Kinetics in Aqueous Systems", American Chemical Society Symposium Series, 1979.		

DD FORM 1473
1 JAN 73

EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-014-6601

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)